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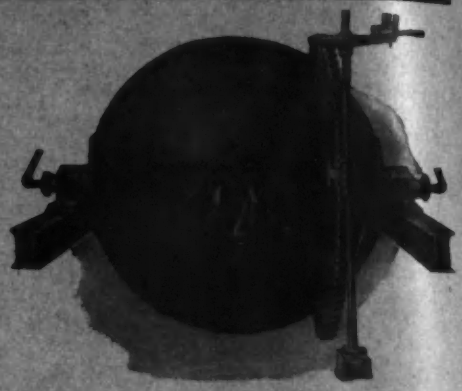

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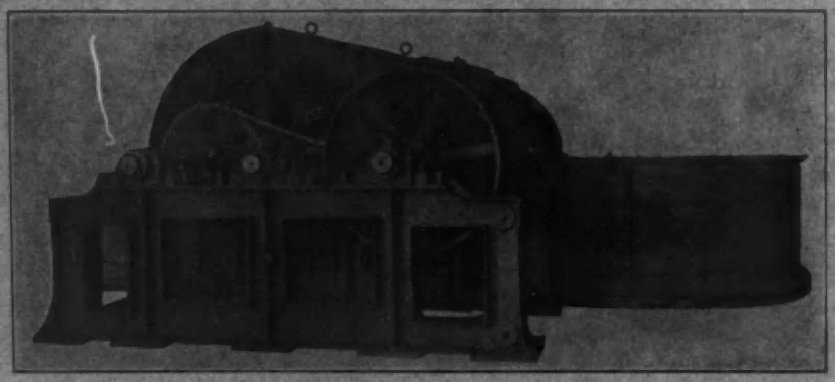

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PAPER TRADE JOURNAL
ESTABLISHED 1872

THE INTERNATIONAL WEEKLY OF THE PAPER AND PULP INDUSTRY AND THE PIONEER PUBLICATION IN ITS FIELD

FIFTY-THIRD YEAR

Published Every Thursday by the
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PAPER TRADE JOURNAL

With Which Is Combined

PAPER

The Magazine of the Paper Industry

Vol. LXXXI, No. 13 Thursday, September 24, 1925

Demand In Boston Market Shows Improvement

Coarse Paper in Good Demand But Prices Being Cut—Wide Spread Interest Is Manifested in Eastern Class Rate Investigation—National Paper Trade Association Holds First of Fifteen Meetings on Wednesday of Last Week at the Harvard Club Appeal for Better Merchandising in Paper Trade

[FROM OUR SPECIAL CORRESPONDENT]

BOSTON, Mass., September 21, 1925.—A combination of brisk business, a federal hearing on freight rates that keenly interested this section, and the presence of officers of the National Paper Trade Association kept the local trade "on its toes" this past week.

Of the three it was generally agreed that while the question of freight rates was a moot one and despite the fact that the national officers had an important message, the opening up of an era of good business was about the most refreshing thing local houses had to discuss.

Practically All Houses Report Good Week

Careful survey shows that the Boston trade at last is "looking up" a bit. Practically all houses report a good week, reflecting the insistent prediction that early Fall would see a change for the better. It was explained, however, that this optimistic outlook was not to be interpreted as a "grand revival." On the other hand, the impression the writer obtained was that the improvement was quite noticeable, steady and substantial. As a matter of fact, it has been the best week since January and that is saying a lot for this district, most of the houses agree.

A distinct, clean amount of good business is steadily sifting through. The most noticeable increase is in houses dealing with fine grades, such as announcements, stationery, etc., one house reporting that holiday business was already coming in and that it was experiencing the earliest and heaviest demand for such business in the history of the house.

Price Cutting on Coarse Paper

Coarse papers are still in good demand, but this branch of the business still is in the clutches of a price cutting epidemic. It is referred to as a "fresh outbreak of an old disease." Naturally every house in this division suffers from this situation, and both sides admit it. One dealer put the situation aptly when he said: "It needs a Moses or a committee of Moses to lead us out of this chaotic wilderness."

The chip board market did not share in the week's good business to the extent the other branches did. The paper box factories just now are not any too busy, and consequently are not in the market for board. Most of these factories had good stock put in previous to the recent price advances. The candy trade is using boxes in fair volume and even a far heavier demand is anticipated at the beginning of next week.

Holiday boxes and containers already are "in the works," and the call seems to be for tissues, wrappers, also wax linings and sealing tape. Jobbers handling these materials, also the mills, report a fine business and see no let up until after the first month of 1926.

Rag stock and old papers continue to be in little demand and the price levels are the same as previously quoted. Most of the mills, it is reported, have at least ninety days supply ahead or rolling and are content quietly to pick up, here and there, a car or two of stock when needed, confident that it can be bought at their prices.

Class Rate Investigation

Widespread interest in the Eastern class rate investigation which was conducted by the Interstate Commerce Commission was centered here this week and brought to Boston representatives of some of the country's largest paper manufacturers. The Boston hearings lasted five days and were held mainly for the New England territory. Leaders in the paper making industry joined with other industries in combating the rate structure proposed by the carriers.

Among those who made formal appearance as counsel, or in other ways as representatives of the paper interests, were: Arthur E. Pearson, of Boston, for Hollingsworth & Whitney; Mr. Wane, for the Great Northern Paper Company; Wilbur La Roe, Jr., for the International Paper Company and others; Charles L. Whittemore, for the New England Paper and Pulp Traffic Association; A. H. Campbell, of New York, also for the International; Sheldon E. Wardwell, also for the Great Northern and the St. Croix, and C. C. Ferguson, traffic manager of the West Virginia Pulp and Paper Company.

Fear was expressed by many speakers at the Chamber of Commerce hearing that unless a readjustment of the rates was forthcoming some of New England's industries might be forced to abandon this section. Claiming that there are 467 bases of rates in the so-called trunk line territory the shippers, including most of the paper mills in northern New England, have asked for a change.

Railroads Gain Without Rate Increases

The gist of the testimony was that the railroads at present are gaining strength without any rate increases; that they are destined to do well at the present rate structure. The thoroughness in which the paper trade went into the hearing is illustrated by the comprehensiveness of the exhibits that were brought into the case, that introduced by Mr Whittemore, for the New England Pulp and Paper Association, being a mimeographed document of 60 pages, 22 by 18 inches, most of them being solid tabulation on rates and manufacturers.

Under cross examination Mr. Wardwell said:

"Every paper mill in Maine is on the equal basis as to rates to

Central Freight Association territory. They have a commodity rate which is in fact the Boston rate, but under one proposal there are 14 paper mills on the Maine Central line which cannot participate in the Boston rate to C. F. A. territory."

Mr. Whittemore severely criticized the Boston & Maine rates when he pointed out that the haul between Lawrence and New York is, in effect, the same as that from points in New Hampshire, while the rate is much less from Lawrence. He said that the carriers' proposals would act as a serious detriment to the activities of New England industries.

C. C. Ferguson of West Virginia Paper Co.

C. C. Ferguson, of the West Virginia Pulp and Paper Company, summed his contentions as follows:

(1) Adoption of the same level of rates in trunk line as in Central Freight Association territory; (2) the same scale of rates interterritorially between these two; (3) the same scale of rates interterritorially between New England on the one hand and trunk line and C. F. A. on the other; (4) the wiping out of the western terminal; (5) the wiping out entirely of the trunk line and the interterritorial grouping systems, and (6) doing away with arbitrary port differentials.

"There appears to be no possible justification for any higher level rates in trunk line than in C. F. A.," Mr. Ferguson continued, "the measure of that uniform level to be determined by the commission after comprehensive revenue studies, one of which I hope may be based on the suggestions I have made.

"As for the interterritorial rates between trunk line and C. F. A. territory, if transportation and traffic conditions, when weighed together, warrant the establishment of the same level in trunk line as in C. F. A., there can be no reason warranting any higher level of rates interterritorially than applying in C. F. A. The change which I have suggested would greatly reduce the carriers' difficulties now experienced and benefit the shipping public as a whole, and make one rate structure instead of three.

"The interterritorial scale adopted and used by the Hudson River and Atlantic seaboard on the east and the Ohio western terminal on the west could be extended to the New England plussed for the New England portions of the whole."

H. A. Campbell of International

H. A. Campbell, traffic manager of the International Paper Company, told the committee that his department is obliged to work long and hard figuring out combinations to get at traffic rates and he wondered how some of the "smaller fellows" ever figured them out under the present structure.

Judge Benjamin W. Cleaves, representing various Maine industries, said in part:

"All posssible adjustment by way of curtailment of wages has already been made. If any additional manufacturing cost is added nearly all of the small producers will be compelled to do one of two things, (1) close down the business (2) move to some other locality. Either of these eventualities strikes a hard blow at the community in which the industry is located.

"The outlook for the future is far from rosy. Any new discouragement or any addition to the cost of production, I feel certain, would create very widespread and grave havoc with our industries, and a reflex of misfortune to the vast number of persons who are dependent upon those industries.

"Already industrialists in the cotton textile line are casting their eyes southward, and the boot and shoe manufacturers are either looking towards, or are fearful of, the St. Louis group. If the industrial exodus once begins it would be a wise man who could predict its end.

"Our people could not possibly go on under the Maine Central proposals which you are asked to put into effect. We ask your most careful consideration and judgment, not only for our people, but for the purpose of saving the Maine Central Railroad from its own folly."

He presented a resolution adopted by the Maine Traffic Association asking for disapproval of the carriers' proposals for a higher rate level for Maine than that established for more thickly settled portion of official classification territory. While it may not be possible to readjust to such basis immediately without too great reductions in revenues of the carriers, in the opinion of the association, "steps should now be taken to reduce the existing arbitrary difference of northern New England over southern New England, so far as intraterritorial rates are concerned, and that interterritorial rates as adopted for Maine Central Railroad Company on the same basis as southern New England."

Much interest was manifested here this week in the first of 15 meetings which the National Paper Trade Association is to conduct in various cities throughout the country. The meeting was held Wednesday at the Harvard Club. At the afternoon session about 30 members attended and in the evening at the banquet and meeting about 80 were present, including many salesmen.

Trade ethics, policies and problems were discussed, the general theme of the speakers being an appeal for better merchandising policies in the paper trade. J. C. Mallaliu, of the George W. Millar Company, New York; W. C. Ridgway, secretary of the national association, and N. A. Schoenbucher, of the association, were speakers. Mr. Schoenbucher spoke at length on merchandising, principally affecting the coarse paper trade, and it was generally agreed that his speech, as well as the help obtained from the other speakers' messages, will help in laying a foundation for improved conditions in Boston.

Demand for News Print Slack in Germany

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 23, 1925.—The demand for news print and other low grade papers remains slack, according to a report just received from Assistant Commercial Attache Douglas Miller, Berlin. The market for fine papers has slightly improved, particularly for writing papers, and exports have also increased slightly. An increased demand for tissue paper is also noted, but sales of cigarette paper both for foreign and domestic trade have fallen off. Sales of fancy wrapping paper for chocolates and confectionery as well as other types of packing papers are likewise unsatisfactory. There is a small demand for fancy cartons and similar articles, with competition from French and Belgian firms increasingly noticeable. In general the paper mills are complaining of the lack of good paper making wood, a condition which it is anticipated will bring about increases in the price of mechanical ground wood pulp.

Swedish Wood Pulp Prices Advance

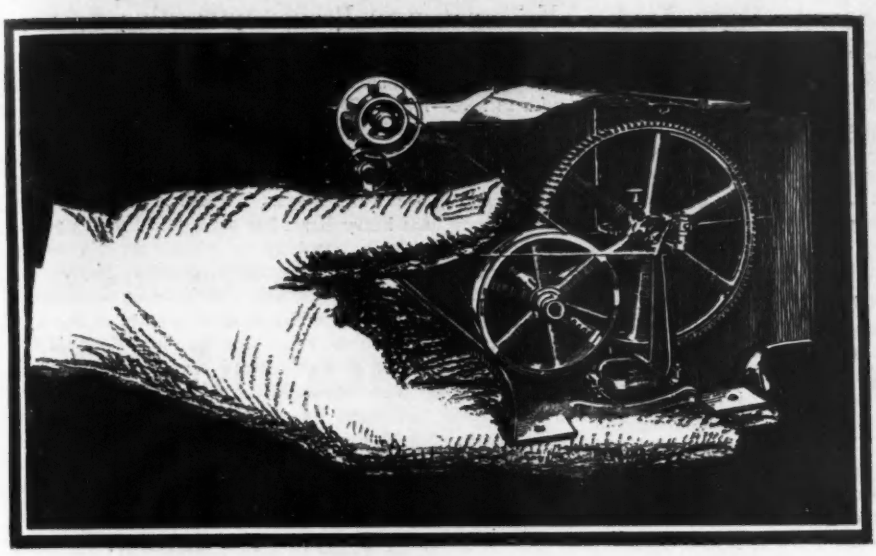
[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 23, 1925.—Prices of wood pulp were advanced during the last two weeks in August, according to a report just received from Vice Consul Samuel G. Elbing, Stockholm. Latest quotations for chemical pulps, first quality, per 100 pounds, are: bleached sulphite $3.65 to $3.95; easy-bleaching sulphite $2.67 to $2.86; strong sulphite $2.43 to $2.61; strong sulphate $2.55 to $2.74. Mechanical ground wood is quoted at $0.68 to $0.73 per 100 pounds for moist pulp and $1.45 to $1.64 for dry. No changes occurred in the prices of news print and wrapping paper.

New Bleaching Equipment Installed

The Mattagami Pulp and Paper Company, whose plant is at Smooth Rock Falls, Ont., is now installing a high density bleaching equipment at the mill. The capacity of the mill is about 200 tons daily of unbleached sulphite and, by January 1 next, 50 per cent of the output will be bleached and, in time, the whole of the production. S. R. Armstrong, general manager of the company, spent a few days in Toronto last week and says that the unbleached sulphite now turned out is finding a ready market.

Common Sense



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The BIRD SAVE-ALL

THE Bird Save-All prevents waste of valuable paper machine stuff and returns it in condition for immediate use.

This saving goes on automatically every minute the paper machine is in operation. It soon piles up to many times the cost of installation.

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Philadelphia Paper Trade Shows Improvement

Steady Market for All Grades Responsible for Firmer Prices—Gain in Book Paper and Card Board Consumption—Bonds and Ledgers in Better Demand—Heavy Krafts Successfully Used for Packing Cement—Paper Trade Golf Tournament Proves Interesting Event

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 21, 1925.—Slowly but surely the Philadelphia paper distribution trade is keeping pace with the general improvement in the industrial world hereabouts. In all the larger enterprises there is reported a far reaching and improved business trend and although the upward swing has been evident ever since the Labor Day holiday it has been of slow growth. The gradually improved market for all grades and lines of paper has been responsible for steadier price quotations and, in numerous lines, an advancing value.

Fine Papers Slightly Improved

The fine paper markets appear to be the slowest to respond to the general improvement and although there was a slightly better demand for bonds, ledgers, and other writing papers, the leading products of consumption were the book papers, card boards and a few of the announcement stocks. It is due to the extremely dull times in the printing industry, which seem to be not only confined to the Philadelphia territory but of nationwide extent, even extending to European countries. In England, there is reported a decided falling off in business among the British printing industries. Philadelphia paper dealers are assured that there is a more hopeful attitude for the Fall activities in this slightly improved market for the fine papers consumed by their allied trade associates in the printing industry. Publishers of the more prominent type continue to consume large quantities of books, coated paper and other paper in the manufacture of publications. Many believe that the higher postal rates recently effective, have materially affected the consumption of fine papers and that the present dull times in the printing industry are due to the efforts of the public to economize on postage, and so to cut down printing matter purchases.

Steady Gain in Coarse Paper Consumption

Coarse papers have shown a steadily increasing demand for all grades and in many lines an advance in price quotations which may be a forerunner of further high values. It is in this division that the response to the improvement in the industrial world is most pronounced. Building papers have been advanced 10 per cent, especially for saturating and deadening felts. This advance in quotations is not due so much to the demand, as to the high cost of raw materials. There was a slight increase of 2¼ per cent in the prices of tissues, with more active markets. Screenings are very active, demand being in advance of supplies on hand. The sheathing market is expected to meet with advancing quotations and dealers are looking forward to a 5 per cent increase over present values, to follow similar rise in the cost of raw materials.

Paper Stocks Less Active

There is not much demand for the majority of grades of paper stocks, the mills still being out of the market for actual purchases. There are many inquiries, but buying seems to have been postponed. The price of common papers has been advanced $1 per ton and this stock is the most active of the grades at this time.

New Use For Heavy Krafts

Philadelphia paper dealers have been informed of the purchase of large quantities of extra heavy Krafts by the Atlas Portland Cement Company, of Easton, Pa., for use in packing its cements for market. This use of Kraft by the Cement Company is a new departure in the industry and will open up numerous avenues for the use of heavy krafts of the grades purchased by the manufacturers of the cement products. It was learned that the Atlas Company had placed orders with the Brown Company, of Portland, Me., the Nashua River Paper Company, of East Pepperell, Mass., and with other manufacturers, for large quantities of heavy Krafts of a 24 x 36—112 to 120 basis, which will be converted into sacks to substitute for the former canvas and burlap bags used in packing the cement. The manufacture of the Kraft bags for cement and other heavy products also requires an especially strong glue for reinforcing the paper containers. While it is believed that this is the first time that heavy Kraft has been used for this purpose in America, it had been tested out previously by Swedish paper makers, in conjunction with manufacturers of weighty commercial products of cognate character, and with so much success that the American manufacturers of Krafts were tempted to try it out in our own markets, with the result that the Atlas Portland Cement Company has decided to make extensive use of the papers in its business. Local paper dealers are confident that with the adoption of Kraft containers by so prominent an industry as this national producer of cement products, that its use will spread to other industries where, heretofore, it was found that only canvas or burlap were of sufficient strength to meet the needs of the manufacturers of these grades of Krafts of durability and strength.

Paper Trade In Golf Tournament

Sportsmanship and goodfellowship were well teamed when trade associates met on the Links of the Manufacturers Country Club, in the 12th Annual Paper Trades Golf Tournament, promoted by the Philadelphia Paper Trade Golf Association, in a two days outing held last Tuesday and Wednesday. While clear weather and well laid out links were factors for a fair matching of golfing talent in trade circles, there were other features that added considerable zest to the day's pastimes. It was the social intermissions between games that brought together members of the paper Manufacturing, distribution and allied industries in closer ties of comraderie, at a good dinner served in the evening, on Tuesday, and the many opportunities for mutual exchange of greetings between the local paper men and their associates from various parts of the country in other diversions. From as far West as Kalamazoo, as far North as Holyoke and as far South as Richmond, there came associates of the paper trade fraternity, all enthused over the day's sporting events and in the opportunity of meeting their fellows in sociable co-mingling in the wide open spaces that span the spacious grounds of the Club. The golfing schedule opened with the qualifying rounds, in eights, on Tuesday morning while the afternoon and the entire Wednesday program was given over to the matched plays of the various classes with five classes playing according to the qualifying rounds forming the last day's schedule. The star performer in this year's tournament was George Hoffner, brother of the well known professional golfer, Charles Hoffner, whose low gross score was 72. The winners were:

Defeated Four, 1st Eight—George Hoffner, Simon Wlater, Inc., Philadelphia.

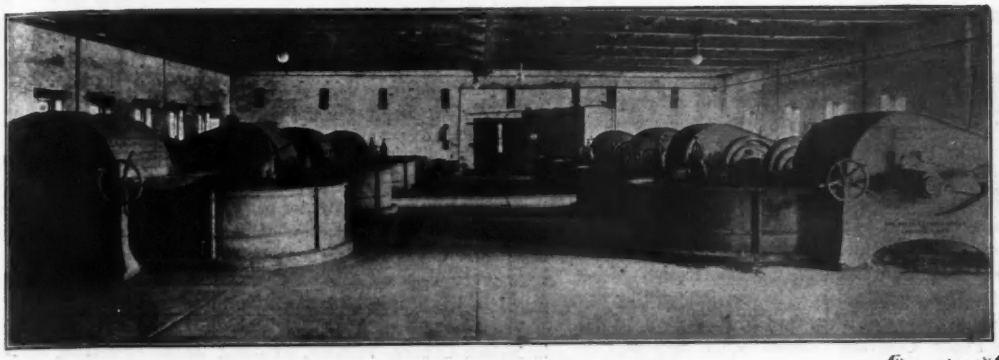
Defeated Four, 2nd Eight—Clark H. Morian, Cherry River Paper Company, Philadelphia.

Defeated Four, 3rd Eight—F. A. Benedict, Jessup and Moore Company, Philadelphia.

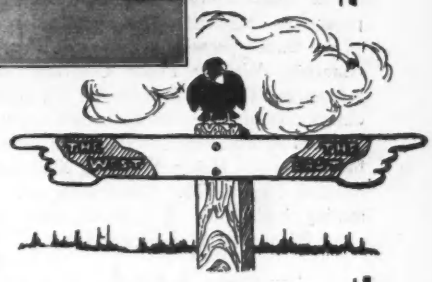
Defeated Four, 4th Eight—Fred Hastings, American Writing Paper Company, Philadelphia.

First Eight, Henry F. Bigelow, New York.

Second Eight, Alex Gillman, Allied Paper Mills, Kalamazoo, Mich.



The Richardson Company Lockland



THE MIDDLE WEST

Here the country is fairly dotted with paper mills, and as usual, we find a great many Dilts Beating Engines.

Here are mills making straw paper, container board, book, tissue, roofing felt, rope, kraft and paper of almost every name and grade.

On all these varieties Dilts Beating Engines are in use,—some old, some new, but all doing good work and constituting a reliable and satisfactory department of the mill.

"The paper is made in the beaters."

The most recent improvement in this line is the Dilts approved NEW TYPE Beating Engine.

These are fast circulating beaters, and remarkable in their ability to handle heavy furnish of stock, beat uniformly, mix rapidly, dump quickly, and **without any increase in power consumption.**

We believe you will be greatly interested in this approved NEW TYPE Beating Engine. Send to us for address of users, names of recent purchasers, and list of our unfilled orders.

Dilts

MACHINE WORKS, Inc. FULTON, N.Y.

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Third Eight, Frank Taylor, Taylor Logan Company, Holyoke, Mass.

Fourth Eight, David Lindsey, Lindsey Brothers, Philadelphia.

Fifth Eight, W. W. Langtry, District Columbia Manufacturing Company, Washington, D. C.

Low Net Score—Henry F. Bigelow, New York.

Kicker Handicap—Willard Pringle, Philadelphia.

Awards consisted of complete golfing outfits and other prizes according to the importance of the ratings of the players.

Appetites increased by the vigorous contests on the green, the members assembled at the dinner table in the Club House and while enjoying a seasonable menu listened to the jocular and informal talks by those selected by Chairman A. B. Sherrill, as impromptu speakers. The first called upon was President Fisler, of the Manufacturers Club, who extended welcome to the visiting paper men on behalf of his organization. He was followed by one of the trade's prominent associates, President S. L. Wilson, of the American Writing Paper Company, whose witty remarks on golfing and cheerful words won the hearty applause of his fellow diners. Then more fun was added to the occasion by the mirthful remarks of President Alex Gillman of the Allied Paper Mills and his successor, Heber Y. Yost, Secretary and Treasurer of the Reading Paper Mills. There were more than forty present representing, besides the Philadelphia trade, New York, Boston, Baltimore, Richmond, Washington, Holyoke, Chicago and Kalamazoo.

Typothetæ and Paper Trades Committees Meet

Disposition of the job lots of printers surplus of papers was the chief topic under discussion at the first of the Fall meetings of the Philadelphia Paper Trade Association Trades Relations Committee, in joint session with the Trades Relations Committee of the Philadelphia Typothetæ, held last Friday in the Bourse. While the problem was discussed and many suggestions made as to the disposition of the job lots of printers papers, no definite action was taken towards its solution, the matter being held over for further consideration. Those who participated in the discussion were the members of the Philadelphia Paper Trades Relation Committee, Norbert A. Considine, Paper House of Pennsylvania, Chairman; David Lindsay, Jr., Lindsay Brothers; Howard Satterthwaite, Satterthwaite Cobaugh Company and W. W. Wilcox, Wilcox, Walter, Furlong Company, and the Typothetæ Committee, W. W. Sharpless, Chairman; President Charles L. Kinsley, of the local printers association; S. Clayton Wickes, William T. Innes and W. Franklin Heath, Secretary of the Typothetæ. Chairman Sharpless reported on the work of the Typothetæ Collection Bureau and its co-operation with the paper men and then told of his trip, covering eleven weeks, to the Pacific Coast and Alaska, from which he had just returned.

Converting Plant on Night Schedule

So extensive has been the demand for special sizes in papers that the plant of the Paper House of Pennsylvania, 28 N. 6th street, has been obliged to run on a night and day schedule. The Converting Department of the firm, located at Front and Federal streets, is one of the largest and most completely equipped in the East and enjoys a nationwide patronage. The rush for special orders within recent weeks has been so great that the department has been operating day and night, in an effort to keep up with the demand for local and out of town business houses.

Local Trade Travelers Back From Europe

Among the local trade associates who have been spending several months in European parts, and who returned during the week, were President Grellett Collins of Dill & Collins, paper manufacturers, of the well known Diamond D brand, 112 N. 12th street, and M. J. Kelley, general manager of the P. H. Glatfelter Company, Spring Grove, Pa. Both spent the summer months on a pleasure tour of Europe.

Standard Soapstone Corp. Organizes

Standard Soapstone Corporation has completed its organization under the laws of the State of New York, with a capitalization of $1,575,000, of which $1,000,000 is paid in. The Company has taken over the entire assets and business of the Phoenix Stone Company, Inc., which was organized three years ago by W. Wallace Benjamin, in association with Charles O. Heydt and F. A. Benjamin, who have carried on and developed the business.

W. Wallace Benjamin and those at present associated with him in the management of the Phoenix Stone Company, Inc., will continue in charge of the operations and business of the Standard Soapstone Corporation, with the addition of Michael J. Copps, who has just resigned as a director of the Virginia Alberne Corporation to become Managing Director of the Standard Soapstone Corporation. Mr. Copps was formerly Vice-President and General Manager of the Virginia Alberne Corporation and has been actively engaged in the soapstone business for twenty-eight years.

A soapstone deposit of more than 1600 acres has been purchased in Nelson County, Virginia, including soapstone-bearing lands purchased from Thomas Fortune Ryan, who has become a director of the new corporation. The land owned, as indicated by extensive core-drilling, contains deposits sufficient to supply the entire United States at the present rate of consumption for 50 years. The company will engage in the quarrying, manufacture, sale and installation of soapstone products. The entire operation will be completed and the company will be producing before the end of the year.

The company by October 1 will have completed at a cost of $400,000 the erection of mills of steel and glass construction equipped with standard and special machinery for soapstone production. A 1,000 horse power condensing steam turbo-electric generating plant is under construction on the Tye River. A six mile standard gauge railroad connecting with the main line of the Southern Railway is also being built.

It is estimated that the property of the Standard Soapstone Corporation in Virginia contains 25,000,000 cubic feet of soapstone. The plant and the quarries which are now being opened up are equipped with quarry machines, steam shovels, derricks, locomotives and rolling stock.

The officers and directors of the company are W. Wallace Benjamin, president and general manager; Charles O. Heydt, secretary-treasurer; Clifton Reeves, vice-president and industrial engineer; F. A. Benjamin; Thomas Fortune Ryan; Michael J. Copps, Managing director; Mortimer J. Copps, Plant Manager; William R. Conklin and Alfred C. B. McNevin.

Ft. Francis Paper Co. Buys Taylor Stokers

The Fort Francis Paper Company has purchased from the Taylor Stoker Company, Limited, one 8-retort, 21-tuyere, Type "H" Taylor stoker for installation in its paper mill at Fort Francis, Ontario. This stoker will be installed under an 800 H. P. B. & W. boiler, operating at 285 pounds pressure, and will be capable of operating this boiler continuously at 300 per cent of rating. For peak loads of short duration the installation can be pushed to even higher ratings. The Taylor Stoker Company, Limited, manufactures these stokers at Belleville, Ontario.

New Speed Reducer Book

The Foote Bros. Gear and Machine Company announces the publication of a new revised edition of the IXL Speed Reducer Book. This book contains considerable new engineering information pertaining to the solution of problems involving spur and worm gear speed reducers. It is also replete with illustrations, tables, formulæ, practical problems and general information, of considerable interest to engineers and plant executives who have to deal with transmission gearing and speed reduction problems. The company will be pleased to furnish free copies on request, to plant executives and engineers.

BLEACHED and UNBLEACHED
SULPHITES
KRAFT PULPS
GROUND WOOD
NORRONA
PULP STONES

PERKINS-GOODWIN CO.
33 WEST 42nd STREET
NEW YORK

PAPER
PRINTING PAPER
of
EVERY DESCRIPTION

Toronto Trade Appears on Sound Foundation

Outlook for Paper Business Better Than for Some Time—Prices in All Grades Hold Firm—Good Demand Experienced for Ground Wood—Mattigami Pulp and Paper Co., Install High Density Bleaching Equipment—Result of Howard Smith Paper Mills Contest

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ontario, September 21, 1925.—In most lines of paper, orders are coming in a little more freely and, while they have not increased materially in size, are more numerous. The various printers do not carry stock to any extent and only send out for paper when jobs in hand are well under way. This makes heavy demands on the service departments of the paper houses, who have to give as much attention to a one ream order as to a ten ream one. There is one cause for satisfaction, however, and that is the small orders, which are running into a good aggregate.

Prices are holding firm in all lines and the trade for fall appears to be on a good foundation. The past two months have been rather quiet, but the outlook is considerably better than it has been for some time. Some very active buying has been done in tissues, wrappings and paper bags. Wall paper manufacturers are out with several new designs and patterns and a good volume of business is looked for by the producers.

In the book and fine paper arena, there is a steadily increasing demand. Manufacturers of paper boxes are becoming busier after a rather quiet summer and board mills are speeding up production. There is an upward tendency in the prices for waste paper stock and an advance in board is looked for, sooner or later. The mills will soon be operating close to capacity. Test board quotations in the United States have been advanced and it is believed that, in due course, the Canadian market will act similarly. Dealers expect considerable revival in all grades of wrapping and paper bags during the next few weeks.

Pulp Prices Are Firmer

In the pulp market, the demand for ground wood is fairly good and mills are well sold up with no heavy stocks on hand. The prevailing figure is from $27 to $33 a ton. There is no change in the chemical pulp situation except that the higher grades are stronger. Some strength is being shown in both bleached and kraft, while unbleached is being absorbed by the mills in regular quantities. An advance in sulphate pulp went into effect recently and the quotation is now $70 per ton. Bleached is selling at from $78 to $90 per ton; easy bleaching of the best quality at $60 to $65, and of the second quality, $56 to $60. As the mills get busier the demand increases and the outlook, on the whole, is very fair.

There has been no change in the price of pulp wood but large handlers of the product are hopeful that something tangible will result in the near future. In the meantime, values are about 10 per cent lower on peeled wood than prevailed at this period in 1924.

New Forestry Building About Completed

The handsome new building for the Forestry Department of the University of Toronto, which is located on St. George street, Toronto, is about completed and is modernly equipped in every way. The old building in Queen's Park became too small for the purpose to which it is devoted, under the direction of Dr. C. D. Howe, and in the new quarters several additional courses of study and work will be undertaken.

No Truth in Amalgamation Report

A report which gained considerable ground, was that a probable merger would take place between the Mattagami Pulp and Paper Company and the Spruce Falls Company, whose plant is located at Kapuskasing, Ont. J. H. Black, president of the latter company, stated this week that there was absolutely no foundation for the rumor and he is at a loss to understand how it started. When asked for a definite outline of the plans of future development of the Spruce Falls Company, Mr. Black said that he would not have anything to say for a few days yet, when he expected to be in a position to make an authorized statement. The new offices of the Spruce Falls Company, which are on the twelfth floor of the new Northern Ontario building, are spacious and attractive.

Won Interesting Contest

The Howard Smith Paper Mills, Montreal and Toronto, recently offered a valuable prize for a suitable name for a new line of paper. More than 1,200 printers competed, both employers and employes. S. J. Vogan, of Toronto, won the premium with "Velvalur," which has been adopted as the regular trade name. The Howard Smith Paper Mills now announce another contest, with three valuable prizes, for the best printed folder utilizing "Velvalur." There will also be three awards for the best printed booklet on the new paper.

New Daverin Mills in Operation

The paper mill at Camden East, which was idle for a long time and was taken over by Dan Daverin, formerly of Thorold, and others, is now in operation and is turning out various lines of specialties. Samples of book, envelope and other papers have been sent out to the trade and a number of improvements have been made to the plant, bringing it to a better productive capacity.

Notes and Jottings of the Industry

William Reynolds, of the Port Arthur Division of the Provincial Paper Mills, is holidaying in Toronto and Georgetown.

George R. Gray, of Sault Ste. Marie, Ont., president of the Fort William Paper Company, was in Toronto during the past week calling upon the trade.

The annual meeting of the shareholders of the Spanish River Pulp and Paper Mills will be held in Toronto on September 24 for the election of officers, receiving of reports, and other business.

Miss Josie Southgate, who is employed in the Spanish River Pulp and Paper Company, at Sault Ste. Marie, Ont., swam across the St. Mary's river recently, which is about a mile and a quarter wide. On the Canadian side she had to face a very strong current.

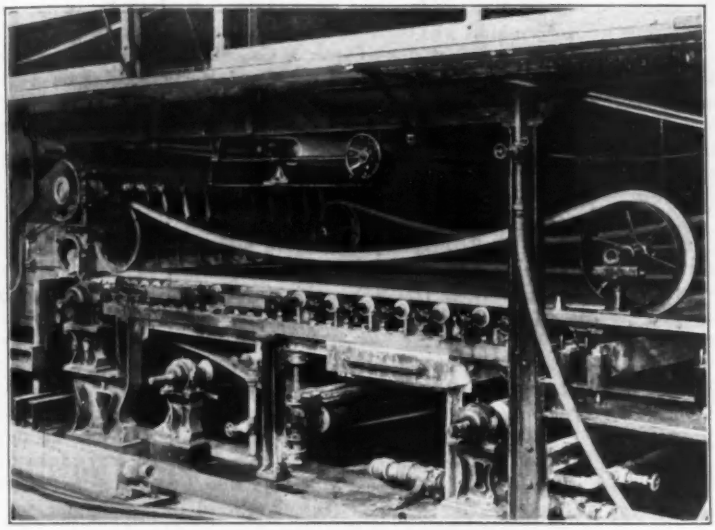
S. F. Duncan, of Toronto, treasurer of the Provincial Paper Mills, has returned from Bigwin Inn, Muskoka district, where he has been spending a holiday.

A former resident of Toronto, in the person of R. V. Hough, of Los Angeles, Cal., has lately taken a large interest in the Chemical Mines Company, producers of sodium salts, which has undertaken the development of Burt's Lake sulphate of sodium deposit in the San Bernardino valley, Cal. The capitalization of the company is one million dollars and the main shaft for the operation is nearing completion.

W. J. Blackley, representing the Beveridge Paper Company, of Indianapolis, Ind., was in Toronto last week, on business.

Former Mayor C. Alfred Maguire, of Toronto, who is an uncle of Beverley Maguire, of the sales staff of the Provincial Paper Mills, Toronto, has been appointed a member of the Ontario Hydro Power Commission.

Word has been received by Toronto friends of the death of W. S. Thomson, in Vancouver, B. C., who was widely known in eastern paper circles. His father was for many years superintendent of a large printing plant in Toronto.



You Can Make Better Paper With the Voith Stock Inlet

If your product is made on a Fourdrinier, Harper or Yankee machine, its quality can be improved by the installation of the Voith Inlet. Caliper, formation and surface are factors that help to determine whether paper is superior or inferior in quality.

The use of the Voith Inlet makes possible a sheet of uniform caliper across the full width of the machine and improves the formation to a remarkable extent. Lumps, foam spots and water streaks are prevented.

The reasons for these improvements and the actual experiences of manufacturers of book, bond, wrapping and waxed papers are ready for your consideration, as soon as we know that you are interested. Your inquiry will bring full information.

VALLEY IRON WORKS CO.

APPLETON, WISCONSIN

New York Office: 350 Madison Ave.

These Concerns Have Bettered Their Product

- Hammermill Paper Co.
- Kimberly-Clark Co.
- Menasha Printing & Carton Co.
- Marathon Paper Mills
- Northwest Paper Co.
- Mead Pulp & Paper Co.
- Howard Paper Co.
- Champion Coated Paper Co.
- Bogalusa Paper Co.
- Hammersley Manufacturing Co.
- Nekoosa Edwards Paper Co.
- Eastern Manufacturing Co.
- Rhinelander Paper Co.
- Warren Manufacturing Co.
- Bergstrom Paper Co.
- Itasca Paper Co.
- Algonquin Paper Co.
- Kalamazoo Vegetable Parchment Co.

Third Annual Mill and Merchants Conference

Crocker-McElwain Co. and the Chemical Paper Mfg. Co. Entertain Mill Agents at the Hotel Nonotuck on Monday and Tuesday of Last Week—Address of Welcome is Made by C. A. Crocker of the Crocker-McElwain Co.

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 21, 1925.—The third annual Mill and Merchant Conference of the Associate Mills, the Crocker-McElwain Company and the Chemical Paper Manufacturing Company, was held at the Hotel Nonotuck on Monday and Tuesday of last week. Distributors of the products of these mills were in large attendance many of them accompanied by their wives. The two days session was taken up with discussions of sales policy and study of the advertising campaign planned for the new year.

It was the concensus of opinion of those present that the paper business was improving and a bright outlook was held for the future. The address of welcome at the opening session, made by C. A. Crocker of the Crocker-McElwain Company indicated the sessions were to be carried out with the idea of getting at the kernel of each subject when he stated:

"As you gentlemen have all found out in the last three or four years, the Old Man hasn't much of anything to do in this outfit now except to get up once in a while and throw a little hot air and welcome the friends of the Crocker-McElwain Company and the Chemical Paper Manufacturing Company to this little annual gathering.

"Now I might take this opportunity to tell you several old stories that are hoary with age, and also to give you a sample of my very unusual and distinguished cratory, and I might add a great many things, but, primarily, gentlemen, we are all here for business. That is to say, up to tomorrow noon, with a slight interval this evening when business is taboo, we are here for the purpose of promoting our mutual business interests.

"Now you don't want me to tell you any stories or waste your time with a lot of complimentary oratory. I simply welcome you again, those of you who have been here before, and those who come this time for the first experience with these meetings.

"I certainly hope that the meetings will be helpful from a business standpoint, and that the occasion as a whole will be pleasurable to you all.

"About the corridors last evening there was some question about the weather, and my friend, Harry Mathewson, of Minneapolis, informed me as we sat there with the thermometer at 110 in the shade that they had had a cold snap in Minnesota, and he did not dare to come on here with light clothing for fear we might have a cold snap here; so he had on his winter clothing and brought his winter overcoat. I said "That is all right, Harry, tomorrow I will see that the weather is cooler and you will be more comfortable." So I fixed it up last night after I got home, and you see what the result is. I hope it will continue to grow a little cooler until tonight, when Harry can come to the banquet with his winter clothes on and still be comfortable.

"The time is short, and if we are going to accomplish anything we have got to devote the time to business and not to talk. But before we start on formal matters I should like to ask the gentlemen present if they will kindly stand for a moment while I read the names of some of our good friends, most of whom were here last year, but who in the meantime have passed on to the larger life. Will you please stand?

"J. B. Thayer, Sales Manager of The United States Envelope Company.

"Arthur Stevens, Chope-Stevens Company, of Detroit.

"H. J. Shanley, H. J. Shanley Paper Company.

"Joseph Lux, J. E. Linde Paper Company.

"Theodore Conrow, Conrow Brothers."

The first to address the meeting was Harry J. Winsten, of Winsten & Sullivan, Inc., of New York, who spoke on "Modern Sales Practice Applied to the Paper Business," others who spoke during the sessions were C. H. Baer, Sales Manager of the Associate Mills who outlined the sales and advertising plans for 1926, C. T. Waite, of John Carter & Co., of Boston, on "Making the Paper Book Produce Orders"; Claud Hartwell, of Rourke-Eno Paper Company, of Hartford, Conn., on "My Experience With the Paper Book," C. K. Urquhart, Jr., of Urquhart Paper Company, of New York, on "Selling Manifold and Index Bristols," Frank A. Juckett, of the Old Colony Envelope Company on "Progress of Interwoven Direct Mail Pieces."

At the banquet on Monday evening, graced with the presence of the heads of many competitive mills as guests, the Rev. Dr. Gilker, of Springfield, Mass., delivered a talk on "What is Right with America." He took as his theme an advertisement recently published by an insurance company which was of a most pessimistic character as related to the future prosperity of the individual and gave to his audience an optimistic view of how this country as well as the world in general was growing better, pointing out specific instances to support his contention. From the applause which was given him at the close it was evident that his audience unanimously agreed with him. Tuesday afternoon was given up to golf and a genuine New England clambake and ninety per cent of those present selected the "Bake" for their afternoons pleasure. At the close of the clambake games of various kinds were played the most interesting of which was the spike driving contest for ladies. Prizes were given the winners in all events. The winners in the Golf tournament were low gross—H. F. Donohue; low net—L. A. Smith; high gross—H. W. Mathewson; kickers handicap—C. A. Estey; Mrs. H. F. Donohue; freak hole—B. A. Judd, W. N. Gillett; lowest put score—B. A. Judd.

News of the Wisconsin Industry

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 21, 1925.—An old tailrace connecting with the Fox River at Appleton is being discontinued and filled in. This was made many years ago, and was intended to supply the needs of paper mills. At one time the Appleton Machine Company, makers of paper mill machinery, planned on building a plant on it.

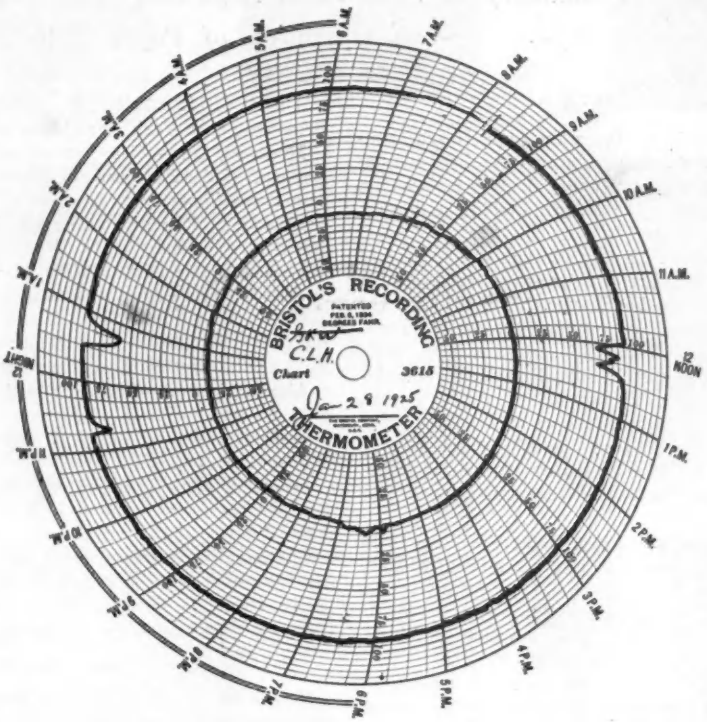
The Fox River Paper Company of Appleton has obtained a building permit from the city to lay new flooring in its mill No. 1, commonly known as the Ravine Mill. The floor will be of reinforced concrete and steel and will cost approximately $15,000. Work is also being rushed to completion on the company's addition to its settling basins, which was started a few weeks earlier. The addition will greatly increase the capacity of the settling basins and will improve the retention facilities.

About 100 people who were instrumental in making the Labor Day celebration of the Kimberly-Clark company mills at Kimberly a success were entertained by the company at a picnic dinner in Riverside Park at Neenah recently. The picnic was followed by a dance in the park pavilion. The Labor Day celebration was one of the largest of its kind ever held in the Fox River valley.

BRINER ECONOMIZERS

Licensed under patents of E. A. Briner & John E. Alexander

Cut down the Cost of Heating the Machine Room



Equalize the Load on the Boiler Summer and Winter

The above chart taken from a prominent news print mill shows the tremendous saving of steam caused by the Briner Economizer. The inside line shows the cold air entering the Briner Economizer. The outside line shows the temperature of the air leaving the Briner Economizer.

The air was heated by the Briner Economizer from between zero and 15° below zero, to 90°, WITHOUT THE USE OF ANY STEAM.

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Ross Engineering of Canada, Ltd.

NEW BIRKS BUILDING, MONTREAL

CONSTRUCTION NEWS

A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills

Construction News

New Haven, Conn.—The New Haven Pulp and Board Company, 265 East street, has work under way on extensions and improvements in its plant to cost approximately $15,000, for which a contract recently was awarded to the Dwight Building Company, 67 Church street.

Brooklyn, N. Y.—Edward F. Lenke, 377 Pine street, has had plans prepared for the construction of a one-story and basement plant at 130th street and Ninety-first avenue, 100 x 125 feet, for the manufacture of paper boxes and containers, reported to cost about $50,000, with machinery. Bids will be taken at once. William Wiegand, 17 West Forty-second street, New York, is architect.

Rochester, N. Y.—The Robfogel Paper Company, Adler place, is said to be planning for the early rebuilding of the portion of its storage and distributing plant, destroyed by fire, September 18, with loss estimated at $32,000. The reconstruction will cost close to a like amount.

St. Louis, Mo.—The Ajax Corrugated Paper Company, 1924 North Second street, recently organized with a capital of $14,000, has perfected plans for the operation of a local plant for the manufacture of corrugated paper boxes and containers. Work will begin at an early date. R. H. Pollak is treasurer, in charge of operations.

Fort Madison, Iowa—The Hinde & Dauch Paper Company, Sandusky, Ohio, is said to have tentative plans under consideration for the rebuilding of the portion of its local plant, destroyed by fire, September 9, with loss reported at $60,000, including equipment. The company specializes in the manufacture of corrugated paper boxes and containers. Sidney Frohman is president.

Madawaska, Me.—The Fraser Companies, Ltd., Edmundston, N. B., has plans under way for the construction of two pipe lines from Edmundston to Madawaska for the transmission of sulphite pulp in liquid form to its proposed new mills at the last noted place, on which work is now in progress. Application for permission to build the pipe lines has been made. The project will be carried out in connection with the paper mill enterprise, the entire work being estimated to cost close to $2,000,000.

Lockport, N. Y.—The Lockport Paper Company is said to have authorized plans for the immediate rebuilding of the portion of its local mill, recently destroyed by fire with loss estimated at close to $100,000, including equipment.

Monroe, Mich.—Fred M. Longnecker has acquired the interest of J. J. Corcoran in the local paper products manufacturing plant heretofore operated under a joint ownership. Plans are said to be under way for expansion in production. The factory is now devoting the majority of output to paper dishes and kindred specialties.

Limoilou, Que.—Preliminary plans are nearing completion for the proposed new paper and pulp mill to be erected on local site by the Anglo-Canadian Pulp & Paper Mill Company, affiliated with the Gulf Pulp and Paper Company, 71 St. Peter street, Quebec. The plant will consist of a number of units, with machine shop, power plant and other miscellaneous structures, estimated to cost close to $12,000,000, with machinery. George F. Hardy, 309 Broadway, New York, is architect and engineer in charge.

Montreal, Que.—Negotiations are nearing completion for the purchase of the Kaministiquia Power Company by the Fort William Paper Company, to be operated in the future as a subsidiary organization. The new owner will incorporate the power utility under the present or closely similar name, and proposes to arrange for a bond issue of $5,000,000, of which $3,000,000 will be sold at once, the proceeds to be used in connection with the acquisition and for proposed expansion. It is also planned to issue preferred stock in an amount of $1,250,000, primarily for distribution among the present shareholders of the Kaministiquia company.

Alexandria, Ind.—The Alexandria Paper Company will begin work on the rebuilding of the portion of its local plant recently damaged by fire, with loss estimated at about $13,000. Day labor will be used.

Amarillo, Tex.—The Western Manufacturing Company, P. O. Box 41, San Jacinto Station, is desirous of getting in touch with manufacturers of corrugated paper shipping cartons.

Charlestown, Mass.—Fire recently damaged a portion of the paper storage and distributing building of William De Vito, 80 Water street. An official estimate of loss has not been announced. Plans for rebuilding are under consideration.

New Companies

New York, N. Y.—The Lax Fibre Mills, Inc., has been incorporated with a nominal capital of $5,000, to manufacture and deal in fibre products. The incorporators are W. H. Lax and F. M. Schwartz. The company is represented by Wahrhaftig & Schaeffer, 51 Chambers street, New York.

Cincinnati, Ohio—The Duplex Paper Bag Company has been incorporated with a nominal capital of $500, to manufacture and deal in paper bags and containers. The incorporators are Philip Swing, William L. Taylor and Peter G. Thomson.

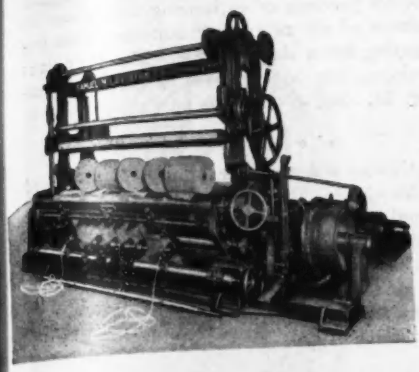
New York, N. Y.—The Ess and Ell Paper Company has been incorporated with a capital of $8,000, to deal in paper products. The incorporators are L. Samberg, S. M. Lerner and M. Sackler. The company is represented by Mark Sackler, 2 Avenue A, New York, attorney.

St. Louis, Mo.—The Advance Bag and Paper Company has been incorporated with a capital of $11,764, to manufacture and deal in paper bags and containers. The incorporators are J. N. Harvey and A. E. Tyner, 707 Clark avenue, St. Louis.

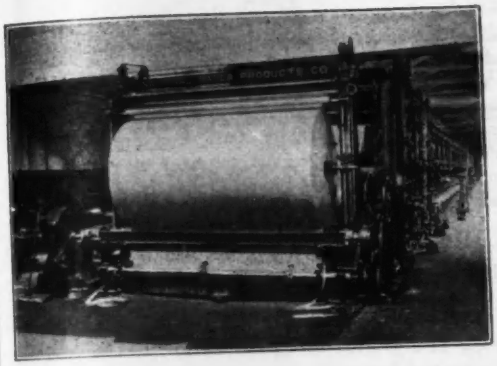
Newark, N. J.—The San-O-Pad Company has been incorporated with a capital of $100,000, to manufacture paper specialties. The incorporators are Raymond D. Carter, Paul J. O'Neill and George F. Seymour, Jr., 20 Clinton street, Newark. The last noted is representative.

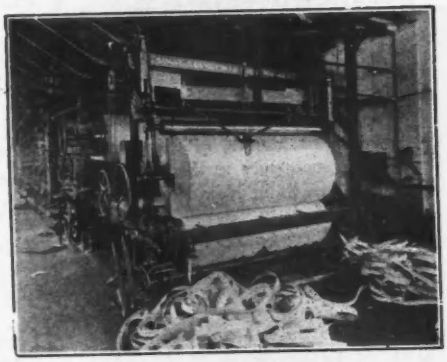
Newark, N. J.—W. L. Ellis, Inc., has been incorporated with a capital of $100,000, to manufacture and deal in writing papers and other kindred products. The incorporators are Walter S., David J., and W. Leo Ellis, 32 Clinton street, Newark. The last noted is representative.

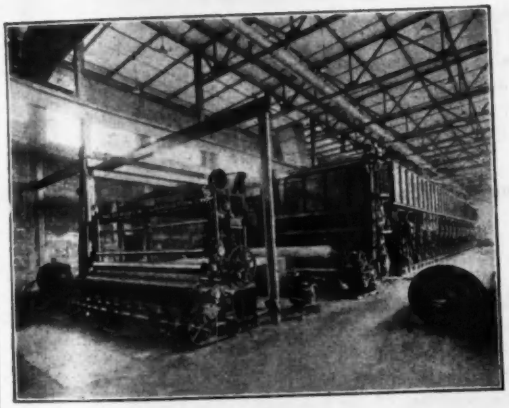
(Continued on page 44)

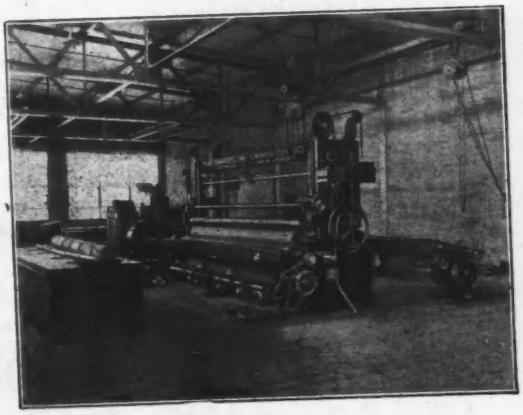


WINDERS AND REWINDERS

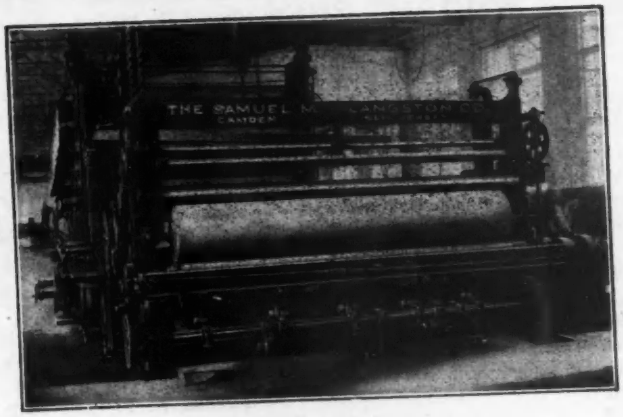








CLEAN
SHEAR CUT
CUT



Manufactured by

Samuel M. Langston Company

Camden, N. J., U. S. A.

TORONTO TYPE FOUNDRY CO.
Toronto, Canada

HERMAN GOETTSCH
Klotzsche-Dresden, Germany

T. W. & C. B. SHERIDAN
London, E. C. I.

New York Trade Jottings

Guy Tombs, traffic expert, of Montreal, who is well known in the paper industry, is visiting New York.

* * *

B. W. McCullough, of the United States Chamber of Commerce, Department of Manufacture, has been visiting his many friends in New York.

* * *

Walter Hicks, of Daniel Hicks, Inc., Fifth Avenue building, New York, has returned to duty after spending an enjoyable vacation at Shelter Island.

* * *

George G. Grinnell, manager of the Paar Paper Company, of 1319-1327 Palmetto street, Los Angeles, Cal., has been visiting New York in the interest of his house.

* * *

G. F. Steele, the well known paper broker, of 33 West 42nd street, New York, has returned from an enjoyable vacation spent at his summer home in Beaurepaire, Que.

* * *

George M. McKee, of the Port Alfred Pulp and Paper Corporation, successors to the Bay Sulphite Company, Ltd., of Port Alfred, Que., is in New York this week.

* * *

Austin Cary, of the United States Forest Service, Washington, D. C., paid a brief visit to New York on his way home from an enjoyable vacation spent in the State of Maine.

* * *

Norman Lang, managing director of the Powell River Company, Ltd., of Vancouver, B. C., is visiting New York. While in the city he is making his headquarters at the Biltmore Hotel.

* * *

I. T. Koffler, international trading kraft paper mill agent, is starting in business as a manufacturer of toilet paper at 631 East 168th street, Bronx, New York. Mr. Koffler will also handle paper cutters.

* * *

Arthur Fuller, of London, England, financial representative of Lord Rothermere, who has been studying the paper situation in Canada, Newfoundland, and this country, sails from New York for England this week.

* * *

Herbert S. Smith, of the United States Forest Service, Washington, D. C., who has been spending his vacation at Lake Waccabuc, Westchester County, paid a short visit to New York on his way back to headquarters.

* * *

W. C. Powers, now of London, England, and previously for many years with the Great Northern Paper Company, has returned to New York from Montreal. "Billy" is scheduled to return to England aboard the Cunard liner *Aquitania*, sailing from New York on September 30.

* * *

H. S. Van Gelder, of Amsterdam, Holland, who has been studying the paper industry in this country and Canada, returned to Holland last Friday aboard the White Star liner *Olympic*. Mr. Van Gelder is a prominent member of the paper industry in Holland, where he owns three mills. He was accompanied by his wife.

* * *

The National Association of Waste Material Dealers announces that the Clifton Paper Mills, of Passaic, N. J., have brought a complaint against the New York, Susquehanna & Western alleging that the rates on wood pulp and waste paper from Baltimore, New York Harbor and Brooklyn to Passaic-Dundee, N. J., are unreasonable. It also asks for reparation.

* * *

The International Paper Company has issued a letter to holders of 6 per cent preferred stock of the company who have not yet availed themselves of the privilege of exchanging their shares for a like number of shares of the new 7 per cent cumulative preferred stock upon paying $10 a share in cash. The letter states that this right to exchange may be terminated by the board of directors after January 15, 1926, or the basis of exchange may be changed.

* * *

Barthold Deutch, German manufacturer of wood pulp, arrived in New York last Thursday, on the United American liner *Resolute*. Mr. Deutch and his chief chemist, Dr. Hellmuth Muller Clemm, plan to visit the wood pulp plants of this country and Canada. Mr. Deutch described a new process of the conversion of wood pulp into fibre silk, on his arrival. He stated that most of the people of Germany and Italy were too poor to wear anything but silk made by this method.

* * *

The Conveyors Corporation of America, 326 West Madison street, Chicago, announces the appointment of Rowland & Burns, 39 Cortlandt street, New York, as district engineers for New York and vicinity. The new representatives of the Conveyors Corporation will handle the sale of American Steam Jet Ash Conveyors, American Air Tight Doors, Cast Iron Storage Tanks, Rack and Pinion Ash Gates, and other conveyor specialties. This organization is an old established concern and is widely known and respected in New York.

* * *

Buying has come into Union Bag and Paper in recent weeks which has had all the earmarks of accumulation, says the *Wall Street News*, and it is stated in quarters which have usually good information that the demand has been caused by knowledge of the perfection of a new process which will result in a substantial reduction in costs and higher net earnings in the future. In fact, some insist that costs will be cut in half through the new method which has been discovered. In addition there have been rumors of a probable merger with International Paper, the latter being said to be anxious to acquire Bag & Paper because of the valuable water power rights owned. There is no confirmation for these rumors, but many appear to believe they have some basis.

Sale of Whitmore Mfg. Co. Postponed

[FROM OUR REGULAR CORRESPONDENT]

HOLYOKE, Mass., September 21, 1925.—Action on the proposed sale of the Whitmore Manufacturing Company to the Rosmarg Coated Paper Company was postponed last Wednesday at the sitting of the Hampden County Superior Court for two weeks.

The postponement is alleged to be due to the possibility of securing another purchaser whose offer is more satisfactory to the banks and the creditors of the Company. Attorney Fred F. Bennett attended the hearing as representative of banks interseted. It is understood that the banks believe a better offer can be secured and are not enthusiastic over the Rosmarg offer, the details of which have been given in The PAPER TRADE JOURNAL. The expected offer is to be made by local parties and those interested in retaining the industry here.

CONSTRUCTION NEWS

(*Continued from page 40*)

Olean, N. Y.—The Seaman Container Manufacturing Company has arranged for an increase in capital from $220,000 to $372,000, for proposed expansion.

Philadelphia, Pa.—Wade Gobel has been appointed permanent receiver for the Hygienic Paper Service Company, 322 North Second street, in bond of $2,000.

Tonawanda, N. Y.—The Daily News Paper Corporation has filed notice of change of company name to the Tonawanda Paper Company. The company recently established a local mill and is now running on a capacity basis.

Announcement

Hy-G Paper Napkins and Dispensers offer the solution to the unsanitary and wasteful use of paper napkins.

Hy-G Products are in a class by themselves.

The ECONOMY of HY-G PRODUCTS counteracts the lowest priced paper napkins, which in every shape or fold in the crude manner they are served, are always *wasteful* to the extent of 50%.

Over seventy distributors throughout the country command ever increasing sales and handsome profits on Hy-G Products because of their exceptional merits.

Hy-G Products sell at sight whenever and wherever introduced to paper napkin consumers.

Exclusive Distribution Only.
Details on request.

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"Won By One Never Loose"
Saves 50% Waste
Plus Highest Quality

Independent Paper Mills, Inc.

Patentees—Manufacturers
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U. S. A.

[*The methods of folds, manufacturing, dispensing, together with trade marks, are patented and registered in the United States, Canada, Great Britain, France and Germany.* Infringements will be rigidly prosecuted.]

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NULLIFIES PAPER SIMPLIFICATION

Gridley Adams, Executive Secretary of the National Council of Business Mail Users, has sent a communication to Secretary of Commerce Hoover calling attention to what the 24 page ruling of the Post Office Department is doing to paper manufacturers.

Among other things Mr. Adams tells the Secretary that this practically nullifies the paper simplification work which has been in progress for the past three years by the Department of Commerce. H. R. Colwell, who is handling the paper simplification program for the Simplified Practice Division of the Department of Commerce, has sent a communication to Mr. Adams in which he suggests that Secretary Hoover might address a communication to the Postmaster General "calling his attention to this phase of the regulation and the effect that it will have upon the work of this Division."

The communication sent to Secretary Hoover by Mr. Adams is quite lengthy, but among other things he says:

For upwards of three years a committee worked with Secretary Hoover and the Department of Commerce on a program of standardization of paper sizes, for the purpose of eliminating odd sizes and thereby cutting production costs. Nineteen different surveys were made of every piece of printed matter that could be obtained, the total running into the hundreds of thousands of samples. The standardization that was effected resulted in the elimination of many sizes, and meant for great economy in production costs throughout the entire line of printing and its allied interests.

Now, all of this work has been largely nullified by the arbitrary ruling of the Post Office Department that "24 pages or over" constitutes a catalog, mailable at the rate of 1 cent for each 2 ounces, and anything less than "24 pages" must pay at the rate of 1½ cents for each 2 ounces. In other words, the millions of circulars, booklets, folders, etc., issued by thousands of concerns, large and small, have to pay a 50 per cent larger postage rate. And 99 per cent of the total pieces, as shown by the nineteen surveys, were less than 24 pages.

Many concerns that formerly issued a 16-page booklet have gotten around increased rate by increasing the pages to 24, but of a smaller sized page. Many are using a lighter weight paper, so that they pay less revenue to the Post Office than before. Others are making up their broadsides into 24-page forms, and so mail for 1 cent what would cost (as a folder) 1½ cents. Here the Post Office carries the same weight, but at no increase of postage. But these concerns do not realize that, where they may save on postage they are losing by reason of the upset the "24 page" ruling is causing paper houses and printers, let alone the comparative business bringing results of a 24-page booklet against a splashing broadside. As one concern writes: "We formerly issued a 16-page catalog, size 8½ x 11, and mailed it for 1 cent. Now we must either pay 1½ cents, or increase the number of pages to 24 (which would run over weight) or cut down the size of the book to 6 x 9. We tried this out and found the returns were pitiful compared to the catalog with the larger page."

According to analyses that were made by the Bureau of Standards 99 per cent of unstitched advertising matter examined was under 24 pages. Therefore, this postal ruling is going to upset present advertising practice. Analyses also show that something over 60 per cent of all stitched booklets and catalogs were under 24 pages. The average business concern can't afford a 24-page book. You can, of course, manufacture a 24-page book with a 16 and an 8, but this sometimes necessitates two forms of printing and double folding and double inserting. Also for gang work printing, the 24-page is nowhere near as convenient when made up of a 16 and an 8.

All magazines and books, which use the largest percentage of paper, will still be manufactured in oblong sheets and in 16 or 32-page forms. All paper machinery, printing and folding machinery has been built for these oblong sizes of paper. But if the 24-page ruling stands the paper merchants and commercial printers will have another set of sizes of paper built on square sheet proportions.

OVER PRODUCTION IN PAPER

That the paper industry is faced with over-production until such time as consumption catches up with productive capacity, was the opinion expressed by George Chahoon, Jr., president of Laurentide Company, Ltd., at the annual general meeting. Mr. Chahoon stressed, in this connection, the following paragraph in his report to the shareholders, advising extreme conservation:

"The consumption of newsprint paper over the past year has been normal. The mills have been operated at 93 per cent of their full capacity. There is every indication that this normal rate of consumption will be maintained for the coming year, but there are no indications that it will be increased sufficiently to meet the development programs of the industry. Therefore your directors deem extreme conservation advisable."

Supplementing the printed report to the shareholders, Mr. Chahoon stated that the company has passed through a year of slight over-production which necessitated the sale of the products at slightly lower prices. Economies of operations have, however, been effected and these have largely offset the lower prices. Any shrinkage in revenues may be attributed, therefore, to curtailed production and not to lower prices.

STABILIZING COMMODITIES

The prediction that warehousing will become as great a factor in stabilizing commodities for distribution as the Federal Reserve has been stabilizing credits was made at Harrisburg by Alvin E. Dodd, manager of the Domestic Distribution Department of the United States Chamber of Commerce. Mr. Dodd spoke before the Pennsylvania State Warehousemen's Association.

"A warehouse," said Mr. Dodd, "is to distribution almost exactly what a bank is to finance—to money. Banking is the older art and its practice has been the more highly developed. I believe the time is not far distant when warehousing will have become as great a factor in the stabilizing of commodities for distribution as the Federal Reserve Banks are in the stabilizing of credits.

"There are gathered with the most minute accuracy, and published broadcast, every detail of banking—gold in reserve, clearings, currency issued and deposits. Certain legal restrictions make the gathering of these statistics of commodities somewhat difficult, but the attitude of several branches of the government has changed greatly within the past few months and there is promise for increasing freedom for industry in such matters. This touches warehousing quite closely, inasmuch as the quantity of commodities in suspense, that is, in storage, is a principal basis upon which to arrive at the economic limit of production, which in its turn lies at the root of effective distribution.

"In any study of distribution warehousing immediately offers itself as a factor almost equal in importance to that of the commodity supply itself. The urban population now is greater than the rural, and this means warehouses and more warehouses to carry the immense hives of human need over periods of low production in agriculture and industry."

Program for 1925 Chemical Exposition

The program of meetings, speakers, moving pictures and other events to be held in conjunction with the 1925 Chemical Exposition during the week of September 28 to October 3 at the Grand Central Palace, New York, has been completed, with the exception of a few last-minute additions and revisions. Altogether, about a dozen leading associations in the American chemical and allied industries are taking part in some feature of the Chemical Exposition. Among the speakers will be a large number of the leaders in American chemistry and in associated fields.

Co-operation from the U. S. Army, the U. S. Department of Agriculture and the U. S. Department of Commerce, in addition to the chemistry departments of a score of American universities, will complete the representation of Chemical America at the Exposition. Three floors at the Grand Central Palace, comprising the exhibits of some four hundred firms manufacturing chemicals, equipment, containers, instruments and many other products, will make up the main body of the Exposition.

A section will be given over to the various United States Government departments for a series of exhibits. The departments which will have exhibits include the Bureau of Chemistry, Bureau of Soils, Bureau of Animal Industry, Bureau of Plant Industry and others of the Department of Agriculture; the Chemical Division and the Bureau of Standards of the Department of Commerce. An exhibit on the fixation of atmospheric nitrogen, showing actual working operations, will be put on by the Fixed Nitrogen Laboratory in conjunction with the American Chemical Society and the Chemical Division.

A meeting of the Technical Association of the Pulp and Paper Industry will be held on Wednesday, September 30, at 2 P. M., at the Grand Central Palace. The following papers will be read:

"The Development of the Save-All," G. W. Repetti, The Dorr Company.

"Acid Resisting Alloys Used in the Paper Industry," Victor Hybinette.

"Heat Insulation in the Pulp and Paper Industry," E. C. Rack, Johns-Manville, Inc.

"Paper Dyes for Clear Back-Water," John R. Roberts, E. I. Dupont de Nemours & Co.

"Speed Reducers for Paper Mills," J. R. Shays, Jr., Foote Bros. Gear & Machine Co.

"An Insulated Paper Mill Roof," C. J. Beckwith, Johns-Manville, Inc.

"Evaporating Black Liquor," R. W. MacGregor, Ernest Scott & Co.

"The Meaning of Hydrogen on Concentration and Its Application to the Paper Industry," W. A. Taylor, LaMotte Chemical Products Company.

"New Developments in Recovery and Finishing of Paper Pulp," K. A. Pelikan, National Homogenizer Corporation.

"Rubber Tank Linings, Hard Rubber Suction Boxes and Ductor Blades," Norman Madge, U. S. Rubber Co.

Motion pictures are to be shown daily each afternoon and evening in a special auditorium in the Grand Central Palace during the week of the Exposition. The program will include two reels describing "Ancient and Modern Paper Making."

On Thursday evening, October 1, the Chemical Industries Dinner will be held at the Hotel Roosevelt, near the Grand Central Palace, at 7:30 P. M. This will be in the form of a co-operative banquet and reunion of various groups of the chemical and allied industries under the direction of a central committee made up of one representative from each society or association represented.

The following organizations are co-operating in the dinner: American Chemical Society, Manufacturing Chemists' Association, Chemists' Club, Salesmen's Association of the American Chemical Industry, American Gas Association, Drug & Chemical Club, Druachem Club, Synthetic Organic Chemical Manufacturers Association, Chemical Warfare Service, Association of Textile Colorists and Chemists, American Ceramic Society, American Institute of Chemical Engineers, American Electrochemical Society, Technical Association of the Pulp and Paper Industry, Society of Chemical Industry and others.

U. S. Senator James W. Wadsworth, of New York, will be the chief speaker. Reservations will be limited to 1,000.

Among the principal exhibitors at the Chemical Show will be many leading organizations prominently affiliated with the paper industry, including the following:

The Bristol Company.
The Dorr Company.
E. I. DuPont de Nemours & Co.
The Eaton-Dikeman Company.
The Flexible Steel Lacing Company.
Foote Brothers Gear & Machine Company.
General Electric Company.
Hendrick Manufacturing Company.
LaMotte Chemical Products Company.
Mathieson Alkali Works, Inc.
Nash Engineering Company.
New England Tank & Tower Company.
Oliver Continuous Filter Company.
Philadelphia Quartz Company.
Standard Soapstone Corporation.
Texas Gulf Sulphur Company.
The W. S. Tyler Company.
United States Rubber Company.
United States Testing Company.
Westinghouse Electric and Manufacturing Company.

Soda Ash **Bicarbonate of Soda** **Caustic Soda**
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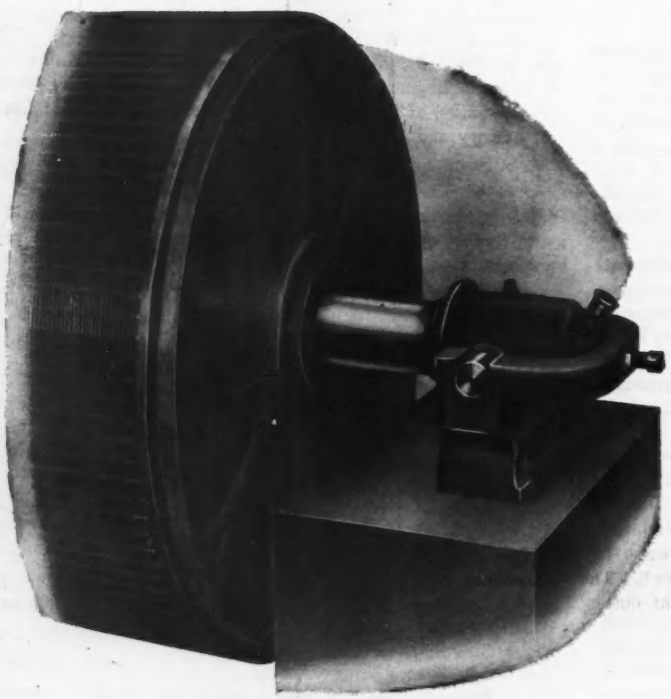

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HAMILTON, OHIO

Section of the

Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Conducted by W.G. MacNAUGHTON, Secretary

Current Paper Trade Literature

Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Paper Making Industry

Clarence J. West, Chairman

Pointers in Paper Making. Paper 35, 586-587 (Jan. 22, 1925). Practical indications on replacing a wire, securing opacity, formation of calender spots, and care of rubber in the paper mill.—A. P.-C.

White Water Losses and Stream Pollution. Paper Trade J. 79, No. 23, 49-54 (Dec. 4, 1924). A verbatim report of the discussion at the fall meeting of Tappi. Oct. 14 and 15, 1924.—A. P.-C.

Application of Continuous Sedimentation Savealls With Pyramidal Surfaces. Paul Gaillet. Papier 27, 1285-1289 (Nov. 1924). The Gaillet saveall consists essentially of a cylindrical or rectangular tank of large cross-sectional area through which the white water passes upwards. The tank is filled with pyramid-shaped surfaces, each element having six triangular faces and being made by bending upwards the four corners of a rectangular sheet of metal and bending the sheet backwards at the center. These surfaces hinder the rise of the suspended matter in the white water and help to agglomerate the fibres and fillers into small masses sufficiently dense to settle out in spite of the upwards motion of the water. The saveall is claimed to give a perfectly clear effluent, and to have been used successfully even for the separation of oil from steam.—A. P.-C.

White Water Coagulation. Louise E. McGrath. Pulp & Paper International No., 115-118 (Jan. 1925); Paper 35, No. 17, 44, 446 (Feb. 12, 1925); Paper Trade J. 80, No. 9, 46-48 (Feb. 26, 1925); Paper Mill 49, No. 6, 80, 82 (Feb. 7, 1925). Coagulation has a twofold action on white water: the aluminum hydroxide formed purifies the water by flocculating the colloidal matter and at the same time carrying down the organisms which ultimately cause decay; and it causes the fibers to cohere rather than to adhere to the sides of the tank, piping, etc. This results in making cleaner paper by keeping the fiber recovery system clean; and the separation of stock and water is so complete that all of the clarified water can be used in place of fresh water and all of the settled stock can be used in place of new stock. The cleanliness resulting from coagulation is clearly brought out by a number of microphotographs.—A. P.-C.

The profits of the company in the second year of its operations show an improvement of nearly $43,000 over the preceding year. After deducting all manufacturing, and other charges and expenses, profits amounted to $868,469 as compared with $825,846. Provision for depreciation, bond interest and reserve for Income Taxes, left a balance of $389,270 as against $345,296. Preferred dividends for the year amounted to $200,000 leaving a surplus of $189,270, equivalent to $3.78 per share on the 50,000 shares of no-par value common stock outstanding.

The balance sheet, after giving effect to the present financing, reveals a much improved working capital position. Current assets amount to $1,699,296 and current liabilities to $295,936, leaving net working capital of $1,403,360. The preceding year's report showed net working capital of $707,684.

Cellulose and Lignin

Constitution of Cellulose. R. O. Herzog. Celluloschemie 6, 39-40 (Mar. 22, 1925). On the basis of chemical and X-ray spectrographic investigations, the following constitutional possibilities exist for cellulose: (1) long chains composed of $C_6H_{10}O_5$ groups, which are combined in groups of four to form the symmetrical crystallographic cell; (2) an anhydro-group, four such groups being present in the cell; (3) a disaccharide anhydride, in each cell two such groupings being present. If cellulose is designated as $(C_6H_{10}O_5)n$, on the basis of these postulates n must equal 1, 2, 4 or a very large number; it cannot equal 3, 5, etc.—J. L. P.

X-Ray Spectrographic Results and Alkali Absorption with the Swelling of Cellulose in Different Alkaline Solutions. J. R. Katz. Cellulosechemie 6, 35-37 (Mar. 22, 1925). The X-ray spectrum of cellulose, swollen by concentrated sodium hydroxide solution, is different from that of ordinary cellulose; new lines appear which may indicate the presence of a new substance. Cellulose absorption experiments, carried out in lithium, sodium, and potassium hydroxide solutions, showed that the characteristic diagram disappeared with the break in the Vieweg and Heuser alkali absorption curves. New lines appear indicating some change. Cellulose hydrate, such as mercerized cellulose or artificial silk, yields an X-ray diagram different from that of cellulose.—J. L. P.

Recent X-Ray Spectrographic Results Indicative of the Existence of Different Highly Polymerized Celluloses. J. R. Katz. Cellulosechemie 6, 37-39 (Mar. 22, 1925). With the appearance of new lines in the X-ray cellulose diagram, after the action of lithium, sodium, and potassium hydroxides, or cuprammonium hydroxide on cellulose, a rather sharp decrease in the absorption of the alkalies occurs. At higher alkali concentrations both the new and the old lines are present in the cellulose diagram, which may indicate the existence of different polymerized forms

TECHNICAL SECTION, PAGE 121

of cellulose in the fiber. From the widths of the cellulose interference rings, the changes in size of the crystallites may be estimated. All artificial silks show enlarged space lattice, indicating a change in the cellulose structure. X-ray spectroscopic tests may prove of importance in technical control work. X-ray data point to the fact that cellulose consists of associated molecules, which are held together by the force of partial valency, the magnitude of which varies: the greater the force, the greater the complex. This would account for the different degree of polymerization or association of cellulose.—J. L. P.

Alkali Cellulose, I. E. Heuser and W. Niethammer. Cellulosechemie 6, 13-18 (Feb. 22, 1925). In the investigation of the reaction between cellulose and sodium hydroxide, the indirect method of Vieweg yields values which are in general agreement with other investigators, whereby within certain limits of concentration the chemical compound $(C_6H_{10}O_5)_2 \cdot NaOh$ is formed. The direct method of Gladstone is only applicable under certain conditions: absolute alcohol should be used to wash out the excess alkali from the cellulose. Washing at 50 to 60° gives lower alkali-absorption values than when washing is made at the ordinary temperature. Cellulose absorbs equimolar amounts of potassium hydroxide from its solutions and indicates the formation of a compound. With increasing degradation of cellulose, as indicated by tests on hydrocellulose (Girard), regenerated cellulose, oxycellulose, and hydrocellulose (Knoevenagel and Busch), the absorption-tendency for sodium hydroxide increases also. This increased absorption may be a measure of the degree of depolymerization of the cellulose. Alkali Cellulose, II. E. Heuser and R. Bartunek. Ibid. 6, 19-26 (Feb. 22, 1925). A continuation of alkali absorption studies on cellulose, with especial reference to the swelling action. The effect of concentrated sodium hydroxide solutions (over 16%) is to form the compound $(C_6H_{10}O_5)_2 \cdot NaOh$ and the fact that cotton takes up more than the theoretical amount of alkali is explained as due to the absorption effect of the alkali cellulose. The conclusion of Vieweg, that in 40 to 50% alkaline solutions the compound $C_6H_{10}O_5NaOh$ is formed, was not confirmed. Maximum swelling of cotton fibers is reached with the formation of the alkali cellulose compound. Rubidium and caesium hydroxides yield the following type compound with cellulose, $(C_6H_{10}O_5)_6 \cdot XOH$. Alkali cellulose formation appears to be an ionic reaction, in which the cation retains the property of hydration.—J. L. P.

Fine Structure of the Cellulose Fiber and Its Significance in Purification Processes. R. O. Herzog. Papierfabr. 23, 121-122 (Mar. 1, 1925). The anatomical building units of plant fibers or cells consist of elementary fibers, which in turn are composed of primitive fibers or fibrillae, and X-ray investigations have shown that the latter are made up of crystallites, the thickness of which approximates a millionth of a millimeter. The crystalline nature of cellulose is altered in a manner depending upon the chemical treatment. Films of nitrocellulose are not crystalline; cotton and wood pulps show the same X-ray diagrams and appear chemically identical; hydrocellulose consists of unchanged cellulose but the position and probably the size of the crystallites are changed somewhat, indicating a possible depolymerization of the cellulose structure. The same is true of oxycellulose, and small changes occur in the crystalline nature of ripening viscose and in the prolonged mercerization of pulp. In the manufacture of pulp the evidence points to the gradual destruction of a highly complicated fibrous structure and a change of physical properties of the same.—J. L. P.

Hydro and Oxycellulose. K. Hess. Papierfabr. 23, 122-127 (Mar. 1, 1925); 164-168 (Mar. 8); Wochbl. Papierfabr. 56, 291-296 (Mar. 7); Zellstoff U. Papier 4, 108-111 (Mar.). An address in which a review is made of the hydro- and oxycellulose problem. Based on his cuprammonium technique, the author contends that among the decomposition products associated with hydrocellulose there is a quantity of only physically changed cellulose, analogous to his cellulose A. Hydrocellulose is viewed as a mixture of cellulose A with cellulose dextrins, and is intermediate in the degradation of cellulose to sugar by means of acids. Cellulose A has the property of being soluble in 8% sodium hydroxide. Oxycellulose consists probably of a mixture of cellulose A with decomposition products, which may be soluble in the oxidizing solution. Carbon dioxide can be stated to be a true oxidation product of cellulose, but the formation of glucuronic acid as an intermediate compound is not known with certainty. The formation of gluconic acid, which results when cellulose is oxidized with bromine and calcium carbonate, may be of considerable significance in the solution of this problem. The discussion following the address is given.—J. L. P.

Action of Dilute Acids on Pulp and Cellulose. R. Sieber. Papierfabr. 23, 127-131 (Mar. 1, 1925). A highly purified sulphite pulp was subjected to the action of acids, varying in normality from 0.06 to 5.7, for 4 hr. at the boiling point of the solutions, employing a rebux condenser. The decrease in pentosan content was 2.9 to 0%; the baryta resistant cellulose decreased from 95.7% to 53.8%; and the fermentable sugar yield, as measured by Lohnstein's saccharimeter, increased to nearly 14%. Similar experiments with commercial wood pulps gave closely agreeing results. An easy bleaching sulphite pulp, when treated with cooking acid, containing 3.8% total SO_3 and 2.7% free SO_2, for 6 hr. at 125° C., yielded 79.1% baryta resistant cellulose and 0.6% fermentable sugar; strong Mitscherlich pulps, when so treated, gave similar values.—J. L. P.

Action of Strong Bases on Cotton Cellulose: Organic Bases. F. Dehnert and W. Konig. Cellulosechemie 6, 1-10 (Jan. 25, 1925). The action of the following organic bases on cotton cellulose was investigated: tetramethylammonium hydroxide, phenyl-trimethylammonium hydroxide, benzyl-phenyl-dimethylammonium hydroxide, trimethylsulphonium hydroxide, and guanidonium hydroxide and it was found that their aqueous solutions effect a mercerization of cellulose as with the inorganic bases. Definite compounds of the type $[(C_6H_{10}O_5)_3 \cdot 1$ equivalent of base] are formed. The reaction appears to be chiefly a chemical one with absorption playing a role especially at the higher concentrations. Mercerized cellulose samples were washed, treated with dilute acetic acid, washed again and dried. They were then exposed to sodium, potassium, and lithium hydroxides 0.5 = normal in strength. In each case the amount of alkali absorbed increased directly with the concentration of the sodium hydroxide used in the original mercerization, until the sample prepared with 4-normal sodium hydroxide was reached. Beyond this no further absorption was observed. Repeated mercerization, with different alkalies, did not materially affect the amount of alkali taken up by the cellulose from a definite concentration of alkali. The same may be stated of the absorption of dyes by mercerized cellulose, or mercellulose. It is distinctly more acidic than ordinary cellulose.—J. L. P.

Degradation of Cellulose by Formic Acid. E. Heuser and W. Schott. Cellulosechemie 6, 10-11 (Jan. 25, 1925). Cellulose (viscose) was heated with a 5% solution of formic acid for 30 min. to 1 hr. in a glass tube at 160 to 180° C. After heating 30 min. at the higher temperature the following substances were found in the tube: about 50% glucose, a few per cent less of residue which resembled hydrocellulose, and 2 to 3% hydroxymethyl furfural. 97 to 98% of the original acid was recovered. At the lower temperature less glucose was formed.—J. L. P.

Production of Pure Cellulose Fibers. H. Silberman. Ger. pat. 407,500. Papierfabr. 23, 23 (Jan. 11, 1925). The complete removal of incrusting substances from plant fibers is effected by treating the material with salts of weak acids and oxidizing agents at a temperature of at least 100° C., under pressure.—J. L. P.

Hydro and Oxycellulose. R. O. Herzog and K. Hess. Papierfabr. 23, 250-251 (Apr. 12); Wochbl. Papierfabr. 56, 480-481 (Apr. 18, 1925). Polemical. The former contends that hydrocellulose can be shown to be a mixture of cellulose with its decomposition products by X-ray spectrographic measurements, while the latter does not believe that it is possible. The X-ray diagrams produced by mercerization are also discussed.—J. L. P.

Preparation of Cellulose Solutions. Badische Anilin und Soda Fabrik. Ger. pat. 408,821. Papierfabr. 23, 147 (Mar. 1, 1925). Cellulose is treated with choral in the presence of tertiary organic bases. Thus, to a mixture of 4 parts choral and 8 parts pyridine, one part cellulose is added and heated to 90 to 95°. The cellulose swells and after about 2 hr. dissolves to a clear, brownish liquid.—J. L. P.

Process for Obtaining a Cotton Suitable for the Manufacture of Cupramonium Cellulose Solutions. R. Schroder. Ger. pat. 409,767. Papierfabr. 23, 163 (Mar. 8, 1925). Preliminary to the preparation of cuprammonium cellulose solutions, the cotton, after bleaching, is treated in a mechanical way, by pressure, to remove a portion of the water. It then passes through a lint machine and is beaten in a hollander or transferred directly to the solution vessel.—J. L. P.

Production of Pure Beet Sugar from Cellulosic Material. L. Meiler and H. Scholler. Ger. pat. 407,412. Papierfabr. 23, 85 (Feb. 8, 1925). Cellulosic material is dissolved in highly concentrated hydrochloric acid, the insoluble lignin substances are filtered off, and by diluting to the proper amount with water the non-cellulosic substances are precipitated and filtered. The cellulose dextrins are then converted into glucose by hydrolysis. The original solution of the cellulose in acid may be brought about under pressure. The concentration of the hydrochloric acid necessary for hydrolyzing the dextrins need not exceed 0.3%, so that the neutralized product does not contain enough sodium chloride to be objectionable.—J. L. P.

Jute Cellulose. A. Lehne and W. Schepman. Z. Angew. Chem. 38, 93-98 (1925). Analysis of jute straw shows the lignin content to be lower, 18%, and the cellulose higher, 68%, than previously reported. The cellulose isolated by chlorination when hydrolyzed with 41.5% hydrochloric acid, gives glucose in the same quantity as cotton cellulose. The methylation products are also the same in quantity. The two celluloses are the same. When jute fiber is hydrolyzed with 41.5% hydrochloric acid, the hydrolysis proceeds at a rate which suggests no combination between the lignin and cellulose, but rather that lignin is an incrustant.—C. J. W.

Determination of the Reduction Capacity of Cellulose Preparations. K. Hess, W. Weltzien and K. Nakamura. Ann. Chem. 440, 290-304 (1924). In a study of the best conditions for the determination of the copper number of alkali-soluble cellulose, it was found that the amount of copper liberated depended upon the temperature of the solution, the time of heating, the carbohydrate, the alkali and the copper concentrations. Five minutes heating is sufficient; the concentration of the cellulose has little effect on the result but the alkali concentration is very important; the copper number decreased from 15 to 6.5 upon increasing the alkali concentration from 2 to 10-normal. A 2-normal sodium hydroxide and a copper concentration of 2 x 10-3 mols. were finally adopted. Repetition of the determination of the copper number on the same sample gave a zero value, indicating that the reducing constituents form a more soluble copper-alkali compound than do the non-reducing compounds. The copper number of specially purified cellulose varied between 1.98 and 4.30 and its rotary power in ammoniacal copper hydroxide between —3.13° and —3.20°. With Schwalbe's method, the copper number is increased from 19.3 in 5 min. to 20.5 in 15 min. and it required at least 3 repetitions of the determination before the product showed a zero value. This would indicate that the reagent causes a change in the product, the amount probably depending upon the purity of the product.—C. J. W.

Determination of Alpha-Cellulose. C. G. Schwalbe. Papierfabr. 23, 232-233 (Apr. 5, 1925). A report of the Fiber Analysis Committee of the German Society of Pulp and Paper Chemists and Engineers. The Jentgen procedure for the estimation of alpha-cellulose is satisfactory in most cases as a quality test for pulps and changes are not necessary. The use of a mechanical contrivance for mixing the pulp and liquor was not favored and might lead to lower values. Other suggestions were: use of a larger quantity of alkali, washing of the residue with dilute alkali, longer time of action, use of a Buchner funnel without a cloth filter, carbonate-free sodium hydroxide, etc. The baryta resistance test is not strictly comparable with the alpha-cellulose test. A comparative investigation on modified procedure is in progress.—J. L. P.

Rapid Volumetric Determination of the Copper Number of Pulps. J. Schandroch. Papierfabr. 23, 43 (Jan. 25, 1925). In the determination of the copper number of pulps, etc., the analysis of the cuprous oxide is avoided and the residual cupric salt is determined in an aliquot part of the filtrate by the potassium iodide method of Haen-Low. Substitution of the ordinary asbestos-covered gauze by a copper plate, a few mm. thick, under the flask, in which the boiling is conducted in the copper number procedure, brings about a slow uniform boiling of the solution.—J. L. P.

Notes on the Viscosity of Cotton Cellulose. J. O. Small. Ind. Eng. Chem. 17, 515-517 (May, 1925). A brief outline is given of factors that are believed to influence viscosity from the growth of the cotton plant until the purification treatment has been completed. A method is described which has been used for determining the viscosity of cotton cellulose in cuprammonium. Although it is understood that colloidal solutions such as are formed by cellulose in cuprammonium do not have viscosities independent of the rate of shear, the latter factor can be neglected, for it is too small to be significant in industrial applications.—A. P.-C.

New Method for Determination of Lignin. H. Schwalbe. Papierfabr. 23, 174-177 (Mar. 15, 1925). The Willstatter-Krull concentrated hydrochloric acid method for the determination of lignin is objectionable in that it yields brown or black colored solutions which require a long time for filtration. Also the Klason 72% sulphuric acid method is not without difficulties: it tends to parchmentize the surface of the fibers with consequent slow and uneven hydrolysis. The new method eliminates these troubles and involves the use of both acids. 0.5 g. finely divided, air dry sample (pulp) is placed in a 500 cc. wide mouth, glass stoppered bottle and treated with 5 cc. hydrochloric acid (sp. gr. 1.07). The bottle is tilted and shaken until the mass is on one side of the container. Then 5 cc. more hydrochloric acid are added in such a manner that the acid is not absorbed by the fibers. 0 cc. of 72% sulphuric acid (15 to 20° C.) are next added, the bottle stoppered at once and held by the hand to prevent escape of hydrogen chloride. If the pressure is excessive, the stopper is lifted momentarily. The mixture is shaken 10 times by the hand, placed in a water bath at 10 to 15° C. for 10 min., again shaken 10 times, and filtered on an asbestos mat in a Gooch crucible. If the solution is not readily filterable, it is again shaken by hand 10 times. The time of filtration does not exceed 15 min. With wood samples the shaking is done mechanically for 15 and 10 min. periods, and the residue filtered in a plain Gooch crucible containing two loose crucible plates. The filtrate is again passed through the filter in this case. Dry at 110° C. to constant weight, wash, and weigh again. The new method is rapid and gives lower values than the Klason procedure. For control work, no preliminary fat extractions are necessary. These determinations, when required, are preferably carried out in an apparatus where agitation is possible.—J. L. P.

Unsaturated Aldehydes and Their Relation to Alpha-Lignin. E. Hagglund. Cellulosechemie 6, 29-35 (Mar. 22, 1925). The theory of Klason that in the part of the lignin group termed alpha-lignin an acrolein grouping is present, is supported by the present investigation. Sulphurous acid reacts with unsaturated aldehydes, such as acrolein, crotonaldehyde, and cinnamic aldehyde, to form a sulphonic acid radical in the beta position. Hydrochloric acid apparently effects an aldol condensation with unsaturated aldehydes, the compound then reacting with beta-naphthylamine to form an anil which crystallizes as the hydrochloride. Beta-sulphopropionaldehyde, or its substitution derivatives, react with aro-

matic amines, such as alpha-naphthylamine, to form anils of the free acid in acid solution, and normal amine salts of the anil sulphonic acids in neutral solution. The assumption of Klason that lignosulphonic acid tends to associate under the conditions was indicated. About two-thirds of the total lignin can be precipitated as the alpha-naphthylamine compound when wood is digested in the usual way with calcium bisulphite solution at a maximum temperature of 135°, or with an excess of sulphur dioxide, according to Cross and Engelstad. The experimental data are recorded in detail.—J. L. P.

Raw Materials

Manufacture of Pulps from Plants Such as Straw, Typha, Phragmites, Etc. C. A. Braun. Ger. pat. 408,409. Papierfabr. 23, 147 (Mar. 1, 1925). The comminuted raw material is soaked in hot or cold lime liquor and, after removal of the excess of lime, is digested with a weak soda liquor in a closed, rotating digester at an elevated temperature and pressure.—J. L. P.

Manufacture of Pulp or Textile Fibers from Broom, Nettles, Potato Tops and Similar Plants. A. Kumpfmiller. Ger. pat. 410,144. Papierfabr. 23, 243-244 (Apr. 5, 1925). The raw fibrous material, such as broom, nettle or potato plants, is boiled in a mixture of alkali liquors and sulphides, which may consist of soda, lime and sulphides of the alkaline-earth elements, or soda, lime and mineral sulphides, or similar combinations.—J. L. P.

Some Observations on Flax Straw. Anon. Wochbl. Papierfabr. 56, 301-302 (Mar. 7, 1925). Essentially an abstract of articles in PAPER for Sept., 1924, and Jan., 1925.—J. L. P.

Cotton Seed Hair as Raw Paper Stock. Kranzlein. Zellstoff U. Papier 5, 93 (Mar., 1925). Cotton of inferior quality, properly purified, can be used in the manufacture of the finest paper. Two processes are suggested for purification: one chemical and the other mechanical.—J. L. P.

Some British Honduras Woods as Papermaking Materials. Bull. Imp. Inst. 23, 12-17 (1925). Analysis of quam (*Schizolobium*, sp.), white moho (*Hibiscus*, sp.), and hard and soft portions of Polak (*Ochroma lagopus?*) gave:

			Polak	
	Quam	*White moho*	*Hard*	*Soft*
Moisture %	10.8	8.5	9.3	8.6
Ash %	1.0	0.5	0.8	1.0
Cellulose %	52.4	52.2	48.9	47.4
Cellulose on dry basis %	58.7	57.0	53.9	51.9
Fiber length—Maximum	1.7 mm.	2.3 mm.	3.0 mm.	2.1 mm.
Minimum	0.5	0.8	0.5	0.7
Average	1.2	1.6	1.8	1.6

Cooking quam 6 hr. at 160° C. with 20% caustic soda at a concentration of 4% gave 47% of well reduced pulp which yielded a rather soft, light brown paper of fair quality. On bleaching the pulp furnished 42% (on the original wood) of a pale cream, opaque paper of fairly good strength. Cooking white moho under the same conditions gave 46% of pale brown pulp of good strength and quality, which bleached readily to give 41% of strong, almost white paper. Under the same cooking the hard portions of polak gave 45% unbleached pulp which produced a light brown paper of good strength, but containing many specks. It bleached readily, giving 42% pulp which furnished a paper free from specks, and of good strength. The soft portion of polak required to be cooked 7 hr. at 160° C. with 30% caustic at a concentration of 4% and gave 43% of well-reduced pulp, bleaching readily (39% yield) and furnishing hard, tough, white paper, which was rather transparent and parchment-like. The unbleached pulp from the whole logs would be suitable for the manufacture of a strong wrapping paper, while the bleached pulp would furnish a white paper of fair quality.—A. P.-C.

Digestion Tests Carried Out at the French School of Paper Making on West African Corkwood (*Musanga smithii*). Papier 28, 317-322 (Mar., 1925). A detailed account of tests which gave a 48% yield of hard-bleaching pulp by cooking 10 hr. at a pressure of 4.5 kg. (60 lb. per sq. in.) with 25% of caustic soda at a concentration of 17° Be. On bleaching with 25% of bleaching powder at 33° C., without addition of acid, there was obtained 43% of bleached pulp (on the original wood) from which satisfactory paper was made.—A. P.-C.

Some Moroccan Plants and Trees Suitable for Paper Making. Andre Fombonne. Papier 28, 199-201 (Feb., 1925). Brief description of the principal Moroccan trees and plants.—A. P.-C.

Storing-Rot in Spruce Sulphite Wood. Torsten Lagersberg. Svenska Skogsvardsforen. Tidskr. 1924; Pulp & Paper 23, 348-349 (Mar. 26, 1925). Rotting of stored pulpwood is attributed to the following fungi, which have been isolated from rotten wood: *Corticium evolvens*, Fries, *Stereum sanguinolentum*, and *Polyporus abietimus*, *S. sanguinolentum* being the most destructive. Preliminary tests indicated that short logs (2 m.) resist better than long logs (4 m.), that slow-growing wood (summer wood) resists better than fast-growing wood (spring wood), that the logs resist rot in proportion to the thoroughness with which the bark has been removed, and that the greatest degree of rot is to be found in those parts of the stacks which were slowest to dry out.—A. P.-C.

Process for Pulping Resinous Wood. W. A. Audibert. Fr. pat. 584,828. The barked wood in 2 m. lengths is placed in the digester, which is then put under vacuum and filled with a suitable solvent (alcohol) carbon disulphide, benzene, acetone, ether, turpentine, etc., under pressure in presence of either liquid ammonia or ammonia gas. When the wood is completely saturated, it is subjected to treatment with an oxidiznig liquor, and after removal of the latter can be treated by any of the known processes for the production of groundwood, sulphite or soda pulp. The liquors from the preliminary treatment are worked up for by-products.—A. P.-C.

Yield Density Method for Determining the Wood Consumption of Paper Mills. R. W. Sterns. Pulp and Paper 23, 466-468 (Apr. 23, 1925). Results of a very large number of determinations indicated that the density of the wood received at the mill of the Abitibi Power & Paper Co. was reasonably constant at an average sp. gr. of about 0.410 (oven-dry weight and green volume), which is due to the fact that it is practically always used before it has had time to dry to the critical moisture content at which shrinkage begins. The total wood consumption of the mill in cu. ft. of solid wood for any period is obtained by converting total production of groundwood and of sulphite and also total cull wood into cu. ft. solid wood by means of appropriate factors determined by means of a sufficient number of tests, adding the losses, and taking account of the wood sent to or taken from the log pile and the amounts in storage in the grinder room and sulphite chip bins. The resultant sum is divided by an experimentally determined factor to make allowance for slasher sawdust and barking losses, estimated as a precentage of the total wood handled.—A. P.-C.

Fournier Process for the Treatment of Grasses. J. Micol de Portemont. Papier 28, 109-120 (Feb., 1925). Brief description of the process and apparatus.—A. P.-C.

Preserving Bagasse. T. B. Munroe assignor to C. F. Dahlberg. U. S. pat. 1,503,202, July 29, 1924. In order to preserve a compact mass of bagasse for subsequent pulp making, it is impregnated with lime, carbonate of lime, or other fermentation retarding substance and coated with a highly compressed fibrous bagasse, cemented together, or other air-excluding material.—A. P.-C.

Method of and Apparatus for Treating Rags. J. H. Howe and C. E. Stevens, assignors to Arrowhead Mills, Inc. U. S. pat. 1,507,605, Sept. 9, 1924. The rags are cut into relatively small pieces, fed upon the surface of a beater roll rotating at high speed, beaten into halfstuff, discharged into a chest where it is agitated and from which it is pumped and discharged under high pressure upon a finishing beater roll rotating at a high speed, beaten to the desired condition, and finally put through a jordan.—A. P.-C.

Recent Paper Research of Bureau of Standards *

By B. W. Scribner, Chief, Paper Section

The Bureau of Standards is charged with the development, construction, custody, and maintenance of reference and working standards and their intercomparison, improvement and application in science, engineering, industry and commerce.

A portion of the work on paper consists of tests to determine quality. This is largely confined to tests of deliveries made to the various Federal Government departments. Considerable assistance is also given in this respect to State Governments. Such tests are made for the public as are not commonly made by the commercial laboratories or when the Bureau is asked to act as a referee in case of dispute. While this work is of a routine nature, the data secured assist in the development of specifications and standardization of testing ethods.

The research on paper has three main divisions—testing, manufacture, and specifications. The equipment for paper testing includes conditioning rooms where the humidity and temperature are automatically controlled within narrow limits. The paper manufacturing research equipment consists of complete pulping and papermaking apparatus enabling experiments in this direction to be carried out on both laboratory and semi-commercial scale.

While the Bureau confines its research as closely as possible to fundamental problems, it has evolved a plan whereby a group in an industry may place a research worker in the Bureau to study some particular industrial problem in which the group may be interested. The results of such work are published by the Bureau and thus made available to the public at large. In this way the facilities of the Bureau's laboratories and the experience of its scientific staff are made of benefit to the maximum number of people throughout the country, and incidentally men are trained for the industries in research methods. There are at present stationed at the Bureau 45 associates, representing 31 industries.

In line with the general policy of the Bureau, to insure selection of research work of the most value to the paper industry and to the public in general, the program of work is formulated with the advice of representatives of the industry. Following is a description of paper investigation recently completed or in progress at the present time.

I. Paper Testing

1. Fiber Composition of Newsprint Paper

Owing to the difficulty of accurately determining the proportion of groundwood and sulphite fibers in newsprint paper, a number of methods of analysis, both chemical and microscopical, have been proposed by various workers in this field. It is generally considered that chemical methods are not adequate where accuracy is important. A survey of the present situation, made by means of a questionnaire, showed that miscroscopical methods were being employed almost exclusively and that preferences were about equally divided between the estimation and count methods. To find the degree of accuracy usually obtained by the methods in use, five different samples of newsprint groundwood and sulphite fibers mixed in known proportions were submitted to eight different laboratories for test. The result showed that errors of from plus or minus 5 to plus or minus 10 were common. One laboratory using a refined count method in which correction is made for difference in weight, had a maximum error of plus 5 per cent. In all other cases the maximum error was at least plus or minus 10 per cent, a few determinations exceeding this figure.

Work done at the Bureau indicates that very accurate results can be obtained by using refined microscopical methods, but it has not yet been possible to simplify these methods sufficiently to permit their use in routine work where time is an important factor.

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II. Paper Manufacture

2. Degree of Sizing of Paper

A study of methods of evaluating the degree of sizing of paper has led to more definite conclusions regarding the electrolytic method proposed by O'Kell and has resulted in further development of new methods.

The Curl method originated by the Bureau, has been considerably improved and an instrument devised to permit the simple and convenient application of the test. This instrument is described in an article published in the Paper Trade Journal, Vol. 79, No. 20, November 13, 1924. A new method has been developed which is simpler and applicable to a much greater range of papers than the Curl method and gives excellent promise as a standard sizing test. This method employs an indicator composed of powdered sugar and water soluble dyes, the indicator being sprinkled on the upper surface of the specimen which is floated on water.

A study of a commercial instrument designed to apply the electrolytic method showed that the Bureau apparatus designed for application of this method of test gives more accurate results owing to the absence of effects produced by voltage fluctuations. At the same temperatures the two instruments agree very well but at different temperatures papers are not graded in the same order. As has been previously pointed out, there are so many variables inherent in this method that it is of doubtful value.

Curl Sizing Tester

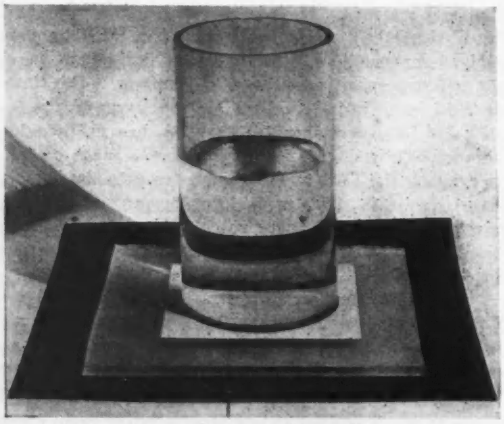
While the Curl and the new indicator methods show good agreement of test results, they are not in agreement with results obtained by the electrolytic method.

3. Testing Paper for Permeability to Liquids

In the valuation of many papers, their behavior in respect to penetration of liquids is of prime importance. Many methods proposed for testing the permeability of paper to liquids are inadequate for the purpose and the Bureau is devoting considerable research in an endeavor to improve existing methods and develop new methods.

Writing paper must be sufficiently resistant to ink that the ink will not spread or penetrate through the sheet before it has had time to dry. Wrapping paper and paper bags are required to be sufficiently water resistant to prevent wetting through by damp articles such as meat and certain other food products. Paper used to protect merchandise in transit or storage, particularly

for overseas shipment and storage in damp climates, should be practically water proof. In testing such papers a specimen is floated on water and on the upper surface is sprinkled a mixture of powdered sugar and a water-soluble dye. Any water which penetrates through the paper is immediately absorbed by the sugar, in consequence of which the particles of dye scattered through the sugar develop their characteristic bright color, providing a definite end point. In this way it is possible to measure



GROUND GLASS TEST FOR WATER RESISTANCE

quite accurately the time required for water to penetrate through paper. Another method used for the same purpose consists in sealing, the paper with paraffin to a glass cylinder, filling the cylinder with water and placing it on a piece of ground glass, which is made more transparent by the water that penetrates through the paper. This method of test is of particular value as regards papers extremely resistant to penetration of water such as various products waterproofed by the use of asphaltum.

At the other extreme from sized and waterproofed paper are absorbent papers such as blotting and toweling. These papers should readily absorb ink or water as needed. Their quality in this respect is found by noting the time required to absorb a very small but definitely measured amount of water placed upon the surface. Improvement in the technique of this method has made greater accuracy possible.

A special type of paper is used for wrapping greasy food products and is required to be fairly resistant to animal and vegetable oils. This type of paper is tested by immersing a specimen in oil after sealing it to a glass cylinder with sirup or glue. If it were attempted to float the specimen on oil the oil would creep over the edges and quickly cover the entire upper surfaee. The test consists in noting the time required for the oil to penetrate through as judged by the appearance of transparent spots.

Detailed descriptions of these methods were given in the following articles published in the PAPER TRADE JOURNAL:

Testing Waterproofed Paper, Vol. 79, No. 10, Sept. 4, 1924;

Testing Paper for Permeability to Liquids, Vol. 80, No. 10, March 5, 1925.

4. MEASUREMENT OF FINISH OF PAPER

The term "finish" as applied to paper has reference to the character of the surface as regards its smoothness or freedom from irregularities. The drying operation leaves the surface uneven, and to smooth it the paper is subjected to pressure between rolls or plates.

The amount of gloss of a given paper is porportional to the degree of finish given the paper, therefore the latter property may be determined indirectly by measuring the gloss. An instrument designed for this purpose by R. L. Ingersoll—the "Glarimeter"—is coming into quite general use in the paper industry. A study of the application of this instrument as regards paper was made. Three different white papers were tested having, respectively, low, medium, and high finish. Several different instruments were used and readings were made by three different persons. Different instruments of the modified type now being made gave almost identical results. Considering agreement of different persons, the maximum difference amounted to 1.8 per cent gloss and the average difference was about 1 per cent gloss. It was concluded that satisfactory results in measuring the finish of white paper may be obtained with this instrument. It is believed that results of tests of colored papers are comparable if papers of similar hue are being considered, but that if the hues are very different the results are not comparable.

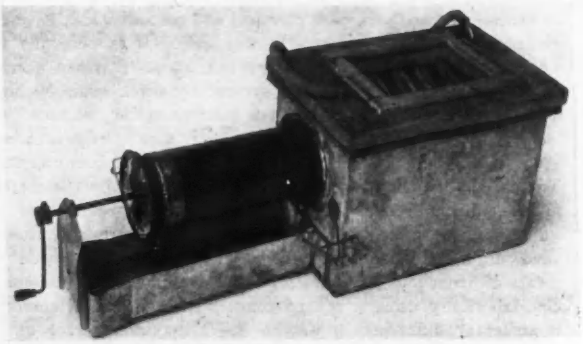
A report on this subject made to the Paper Testing Committee, T. A. P. P. I., was published by the committee in the PAPER TRADE JOURNAL, Vol. 80, No. 7, February 12, 1925.

5. AN EXTRACTOR AND FRICTION CLEANSER

Carbon paper is made by coating a thin tissue paper with a film of carbon and an oily or waxy binding medium. The serviceability of carbon paper depends in part upon the weight and thickness of the tissue base used. In order to test this tissue, it is necessary first to remove the carbon film. Heretofore, the best means of doing this has been to immerse the carbon paper in a vessel of chloroform and rub off the film by brushing with pads of absorbent cotton. This method is very objectionable because of the annoyance produced by the vapors and because of its wastefulness and expense. An apparatus was developed for removing this carbon film readily and inexpensively. It is so constructed that the vapors from the boiling solvent are condensed and fall on the paper on a rotating drum against which a felt friction pad bears. The combination of solution by the continuous stream of fresh hot solvent and friction of the felt pad against the paper removes the carbon film from the paper in a very few minutes. Benzene can now be used instead of chloroform. Besides its application to carbon paper the apparatus is used to extract and cleanse a variety of processed papers and other products such as paraffined paper; paper waterproofed with asphalt, tar, or linseed oil; roofing felt; artificial leather, and balloon fabric, for the purpose of testing the paper or fabric base. A description of this apparatus was given in PAPER TRADE JOURNAL, Vol. 80, No. 12, March 19, 1925.

6. A COMPARISON OF PAPER TENSILE STRENGTH TESTERS

Because of the number and the variety of paper tensile strength testers in use, it was thought advisable to get some idea of the

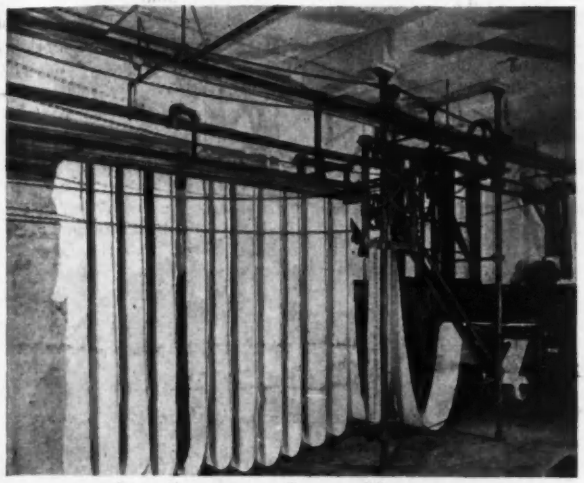


EXTRACTOR AND FRICTION CLEANSER

magnitude of the variations in results obtained with different instruments. Accordingly, a series of tests has been made on 12 papers of different kinds with four different tensile testers in common use. Two of the four instruments represented the swinging arm or pendulum type. The third emloyed a coil spring which was distended by the force required to break the test specimen. In the fourth the force required to break the test strip was indicated as pressure within an ordinary hydraulic

cylinder by means of a Bourdon pressure gage. The data show that fairly concordant average results are obtained with any one kind of tester although the two testers of the swinging arm type show to a little better advantage in this respect than the other two types.

The average results from the different kinds of testers varied considerably. Upon pointing out possible sources of error to



SEMI-COMMERCIAL COATING MACHINE

the manufacturers, all agreed to submit improved types. These have been received and the comparative tests are being repeated.

II. Paper Manufacture

1. USE OF GLUE IN COATING PAPER

In the manufacture of coated paper, casein is used almost exclusively as the adhesive to bind the clay or other material coating to the paper. As both the supply and quality of casein are subject to constant fluctuation and as its continued availability for coating purposes seems rather doubtful in view of its food value, there is real interest in finding a suitable substitute. Glue was formerly used for this purpose but owing mainly to its greater cost as compared with casein, such use in this country is now confined almost entirely to a few special products. There was little definite data available concerning the use of glue and as it seems to be the most suitable alternative for the purpose, research was carried on throughout the past two years to obtain such data.

The semi-commercial coating equipment of the Bureau, consisting of a 14-inch flat bed brush coater with festoon dryer was used in the coating experiments. The results obtained with this equipment were further confirmed by several test runs in a commercial coating mill. Printing tests of the coated papers were made in commercial printing plants.

The results obtained led to the following conclusions: The coating technique with glue is practically the same as with casein except for the necessity of regulating the temperature of the clay-glue mixture; the amount of glue required, in general, is not greater and seems to be somewhat less than that of casein; glue-bound coatings are sufficiently waterproof for all purposes except high grade lithograph papers; glue gives satisfactory results with the different coating minerals commonly employed such as clay, satin white and blanc fixe; glue is of advantage in respect to use of coloring materials sensitive to alkalis; it seems possible to obtain superior folding quality with glue; glue can be purchased on definite specifications and this makes possible more uniform coatings; the printing of gluebound papers requires no modification of the present printing processes as regards either methods or inks employed.

A discussion of some of the results obtained was published in the PAPER TRADE JOURNAL, Vol. 79, No. 20, November 13, 1924. It is proposed to issue a further publication giving more complete details.

This research was made in collaboration with the National Association of Glue Manufacturers which has established a fellowship at the Bureau for the purpose of studying various applications of glue to papermaking.

2. GLUE FOR BEATER SIZING PAPER

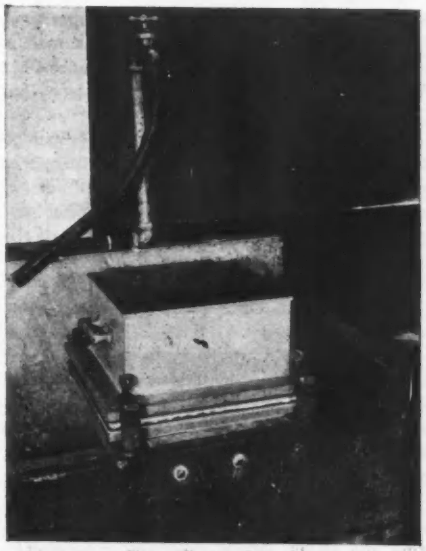
Additional research in cooperation with the National Association of Glue Manufacturers, in respect to use of glue in paper, was a preliminary study of beater sizing with this material. Such application received considerable attention in Germany during the World War, owing to scarcity of the rosin commonly used for this purpose. It is claimed that results are secured not obtainable with rosin, in respect to increased strength, printing and writing quality, and retention of filler or paper.

The experiments so far completed indicate there is considerable basis for the claims made. A limited number of semi-commercial papermaking tests of wood fiber papers gave the following results: There was considerable increase in folding and bursting strength; while the glue itself had no sizing action as regards water resistance, it materially increased the effectiveness of resin sizing; increased retention of filler was obtained in making book paper. Definite conclusions, however, must await the completion of the additional work planned.

On account of increasing scarcity of paper fibrous raw materials, the quality of these basic raw materials is steadily diminishing, therefore any process tending to neutralize the resulting deteriorating effect on paper quality is of vital importance. This consideration has led to the choice of this problem as the main research for the following year on use of glue in paper.

3. CONTROL OF BEATING PROCESS

A first requisite in the study of paper beating is a means of making small sheets of fiber, uniform in quality and free from the personal factor found in sheets made by hand by the usual method. Such sheets are required for test purposes both in evaluating papermaking fibers and in study of methods of controlling the beating process. Satisfactory apparatus for this purpose



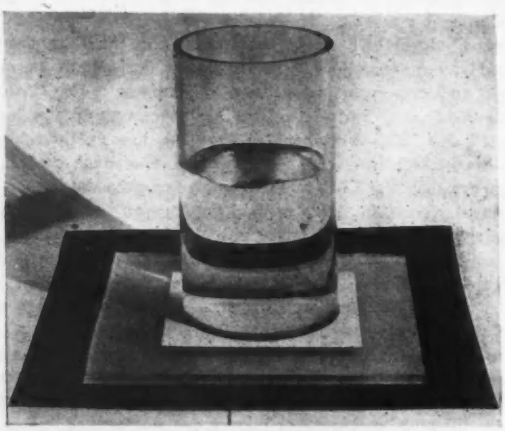
FIBER SHEET MOULD

has been evolved. This consists of a sheet mold, by means of which uniformity of weight and formation of the test sheet are assured, and a means of pressing the sheet so formed under uniform pressure. This apparatus was described in PAPER TRADE JOURNAL, Vol. 79, No. 21, November 20, 1924.

4. PAPER FILLERS

Various mineral substances are used in book papers for the

for overseas shipment and storage in damp climates, should be practically water proof. In testing such papers a specimen is floated on water and on the upper surface is sprinkled a mixture of powdered sugar and a water-soluble dye. Any water which penetrates through the paper is immediately absorbed by the sugar, in consequence of which the particles of dye scattered through the sugar develop their characteristic bright color, providing a definite end point. In this way it is possible to measure



GROUND GLASS TEST FOR WATER RESISTANCE

quite accurately the time required for water to penetrate through paper. Another method used for the same purpose consists in sealing, the paper with paraffin to a glass cylinder, filling the cylinder with water and placing it on a piece of ground glass, which is made more transparent by the water that penetrates through the paper. This method of test is of particular value as regards papers extremely resistant to penetration of water such as various products waterproofed by the use of asphaltum.

At the other extreme from sized and waterproofed paper are absorbent papers such as blotting and toweling. These papers should readily absorb ink or water as needed. Their quality in this respect is found by noting the time required to absorb a very small but definitely measured amount of water placed upon the surface. Improvement in the technique of this method has made greater accuracy possible.

A special type of paper is used for wrapping greasy food products and is required to be fairly resistant to animal and vegetable oils. This type of paper is tested by immersing a specimen in oil after sealing it to a glass cylinder with sirup or glue. If it were attempted to float the specimen on oil the oil would creep over the edges and quickly cover the entire upper surface. The test consists in noting the time required for the oil to penetrate through as judged by the appearance of transparent spots.

Detailed descriptions of these methods were given in the following articles published in the PAPER TRADE JOURNAL:

Testing Waterproofed Paper, Vol. 79, No. 10, Sept. 4, 1924;

Testing Paper for Permeability to Liquids, Vol. 80, No. 10, March 5, 1925.

4. MEASUREMENT OF FINISH OF PAPER

The term "finish" as applied to paper has reference to the character of the surface as regards its smoothness or freedom from irregularities. The drying operation leaves the surface uneven, and to smooth it the paper is subjected to pressure between rolls or plates.

The amount of gloss of a given paper is porportional to the degree of finish given the paper, therefore the latter property may be determined indirectly by measuring the gloss. An instrument designed for this purpose by R. L. Ingersoll—the "Glarimeter"—is coming into quite general use in the paper industry. A study of the application of this instrument as regards paper was made. Three different white papers were tested having, respectively, low, medium, and high finish. Several different instruments were used and readings were made by three different persons. Different instruments of the modified type now being made gave almost identical results. Considering agreement of different persons, the maximum difference amounted to 1.8 per cent gloss and the average difference was about 1 per cent gloss. It was concluded that satisfactory results in measuring the finish of white paper may be obtained with this instrument. It is believed that results of tests of colored papers are comparable if papers of similar hue are being considered, but that if the hues are very different the results are not comparable.

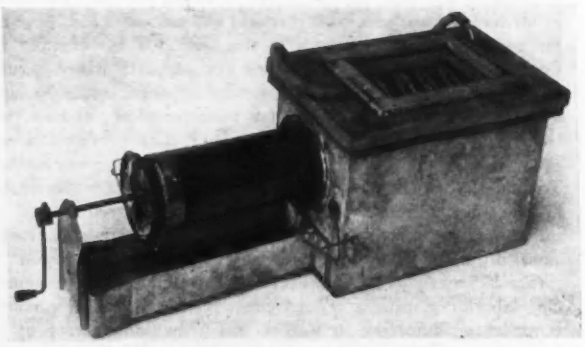
A report on this subject made to the Paper Testing Committee, T. A. P. P. I., was published by the committee in the PAPER TRADE JOURNAL, Vol. 80, No. 7, February 12, 1925.

5. AN EXTRACTOR AND FRICTION CLEANSER

Carbon paper is made by coating a thin tissue paper with a film of carbon and an oily or waxy binding medium. The serviceability of carbon paper depends in part upon the weight and thickness of the tissue base used. In order to test this tissue, it is necessary first to remove the carbon film. Heretofore, the best means of doing this has been to immerse the carbon paper in a vessel of chloroform and rub off the film by brushing with pads of absorbent cotton. This method is very objectionable because of the annoyance produced by the vapors and because of its wastefulness and expense. An apparatus was developed for removing this carbon film readily and inexpensively. It is so constructed that the vapors from the boiling solvent are condensed and fall on the paper on a rotating drum against which a felt friction pad bears. The combination of solution by the continuous stream of fresh hot solvent and friction of the felt pad against the paper removes the carbon film from the paper in a very few minutes. Benzene can now be used instead of chloroform. Besides its application to carbon paper the apparatus is used to extract and cleanse a variety of processed papers and other products such as paraffined paper; paper waterproofed with asphalt, tar, or linseed oil; roofing felt; artificial leather, and balloon fabric, for the purpose of testing the paper or fabric base. A description of this apparatus was given in PAPER TRADE JOURNAL, Vol. 80, No. 12, March 19, 1925.

6. A COMPARISON OF PAPER TENSILE STRENGTH TESTERS

Because of the number and the variety of paper tensile strength testers in use, it was thought advisable to get some idea of the

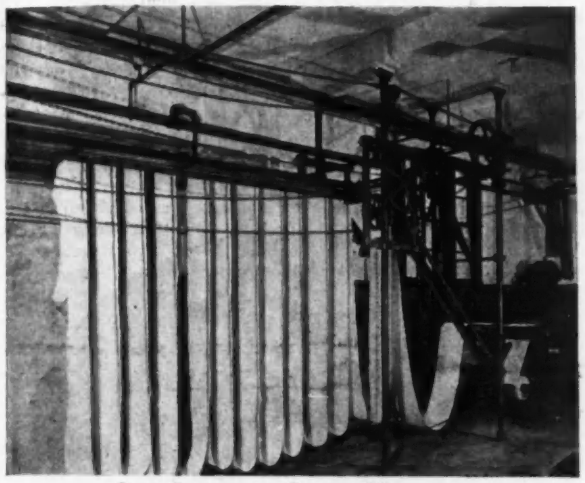


EXTRACTOR AND FRICTION CLEANSER

magnitude of the variations in results obtained with different instruments. Accordingly, a series of tests has been made on 12 papers of different kinds with four different tensile testers in common use. Two of the four instruments represented the swinging arm or pendulum type. The third emloyed a coil spring which was distended by the force required to break the test specimen. In the fourth the force required to break the test strip was indicated as pressure within an ordinary hydraulic

cylinder by means of a Bourdon pressure gage. The data show that fairly concordant average results are obtained with any one kind of tester although the two testers of the swinging arm type show to a little better advantage in this respect than the other two types.

The average results from the different kinds of testers varied considerably. Upon pointing out possible sources of error to



SEMI-COMMERCIAL COATING MACHINE

the manufacturers, all agreed to submit improved types. These have been received and the comparative tests are being repeated.

II. Paper Manufacture

1. USE OF GLUE IN COATING PAPER

In the manufacture of coated paper, casein is used almost exclusively as the adhesive to bind the clay or other material coating to the paper. As both the supply and quality of casein are subject to constant fluctuation and as its continued availability for coating purposes seems rather doubtful in view of its food value, there is real interest in finding a suitable substitute. Glue was formerly used for this purpose but owing mainly to its greater cost as compared with casein, such use in this country is now confined almost entirely to a few special products. There was little definite data available concerning the use of glue and as it seems to be the most suitable alternative for the purpose, research was carried on throughout the past two years to obtain such data.

The semi-commercial coating equipment of the Bureau, consisting of a 14-inch flat bed brush coater with festoon dryer was used in the coating experiments. The results obtained with this equipment were further confirmed by several test runs in a commercial coating mill. Printing tests of the coated papers were made in commercial printing plants.

The results obtained led to the following conclusions: The coating technique with glue is practically the same as with casein except for the necessity of regulating the temperature of the clay-glue mixture; the amount of glue required, in general, is not greater and seems to be somewhat less than that of casein; glue-bound coatings are sufficiently waterproof for all purposes except high grade lithograph papers; glue gives satisfactory results with the different coating minerals commonly employed such as clay, satin white and blanc fixe; glue is of advantage in respect to use of coloring materials sensitive to alkalis; it seems possible to obtain superior folding quality with glue; glue can be purchased on definite specifications and this makes possible more uniform coatings; the printing of gluebound papers requires no modification of the present printing processes as regards either methods or inks employed.

A discussion of some of the results obtained was published in the PAPER TRADE JOURNAL, Vol. 79, No. 20, November 13, 1924. It is proposed to issue a further publication giving more complete details.

This research was made in collaboration with the National Association of Glue Manufacturers which has established a fellowship at the Bureau for the purpose of studying various applications of glue to papermaking.

2. GLUE FOR BEATER SIZING PAPER

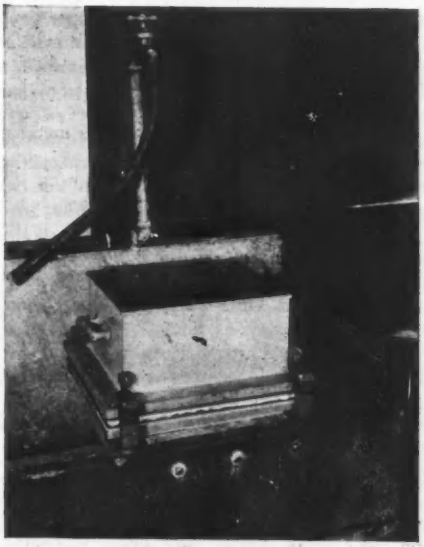
Additional research in cooperation with the National Association of Glue Manufacturers, in respect to use of glue in paper, was a preliminary study of beater sizing with this material. Such application received considerable attention in Germany during the World War, owing to scarcity of the rosin commonly used for this purpose. It is claimed that results are secured not obtainable with rosin, in respect to increased strength, printing and writing quality, and retention of filler or paper.

The experiments so far completed indicate there is considerable basis for the claims made. A limited number of semi-commercial papermaking tests of wood fiber papers gave the following results: There was considerable increase in folding and bursting strength; while the glue itself had no sizing action as regards water resistance, it materially increased the effectiveness of resin sizing; increased retention of filler was obtained in making book paper. Definite conclusions, however, must await the completion of the additional work planned.

On account of increasing scarcity of paper fibrous raw materials, the quality of these basic raw materials is steadily diminishing, therefore any process tending to neutralize the resulting deteriorating effect on paper quality is of vital importance. This consideration has led to the choice of this problem as the main research for the following year on use of glue in paper.

3. CONTROL OF BEATING PROCESS

A first requisite in the study of paper beating is a means of making small sheets of fiber, uniform in quality and free from the personal factor found in sheets made by hand by the usual method. Such sheets are required for test purposes both in evaluating papermaking fibers and in study of methods of controling the beating process. Satisfactory apparatus for this purpose



FIBER SHEET MOULD

has been evolved. This consists of a sheet mold, by means of which uniformity of weight and formation of the test sheet are assured, and a means of pressing the sheet so formed under uniform pressure. This apparatus was described in PAPER TRADE JOURNAL, Vol. 79, No. 21, November 20, 1924.

4. PAPER FILLERS

Various mineral substances are used in book papers for the

purpose of improving the printing quality and in some cases to add opacity to the paper. While such filling substances are used in great quantity by the paper industry, there has been a lack of definite data concerning their comparative papermaking value, therefore, the Bureau has been making considerable research in this direction.

China clay constitutes the largest proportion of filling material used. Papermakers in general consider foreign clays superior to the domestic, but in view of the possibilities of developing the domestic clay industry, a study was made during the preceding year to find the relative merits of American and foreign clays. Eight representative clays were studied. Papermaking tests were made in the Bureau semi-commercial mill and a portion of this work duplicated in a commercial mill. The comparative study included the amount of clay retained in the paper, the quality of the paper produced and the properties of the clay that might affect the paper manufacturing processes. The data obtained showed little difference in amount of filler retained or in the general quality of the paper produced. The foreign clays were slightly superior in color but there was not enough difference in this respect to justify the consideration of only this property in selecting clays. The report of this work was published in Technologic Paper No. 262, issued August 20, 1924.

A similar study was made during the past year of different kinds of domestic materials used as fillers, these being clay, talc, asbestine, gypsum, and crown filler. The first three have similar properties as regards papermaking, being insoluble silicates. Gypsum is a natural hydrated calcium sulphate and crown filler is an artificial preparation of similar chemical composition. The latter two are both comparatively soluble and in view of the large amounts of water used in papermaking operations, would be expected to give entirely different results from the insoluble fillers, especially as to degree of retention in the paper. Aside from solubility, the most striking difference in these materials was in color, crown filler approaching closely to a pure white, with talc and gypsum somewhat lower in color but superior to clay.

Papermaking tests were made in the Bureau mill, making, in each case, one series of runs with 10 per cent of filler and another with 20 per cent of filler. Samples of paper from various parts of the paper machine and samples of the machine water were tested for retention data. Tests of the finished paper included weight, strength, thickness, color, opacity, finish, ash, resin, and degree sized.

The retention data showed, as was expected, considerably less retention of gypsum and crown filler as compared with clay, talc, and asbestine. There was practically no difference in this respect among the latter three. The sizing and other papermaking operations were not adversely affected by any of the fillers. The tests of the finished papers showed that in spite of the differences in color and other characteristics of the fillers there was practically no difference in either the physical or chemical properties of the papers produced. As there is considerable difference in the cost of these fillers, it would seem that as regards use for filling ordinary book paper, their relative cost cannot be taken as a criterion of their papermaking value.

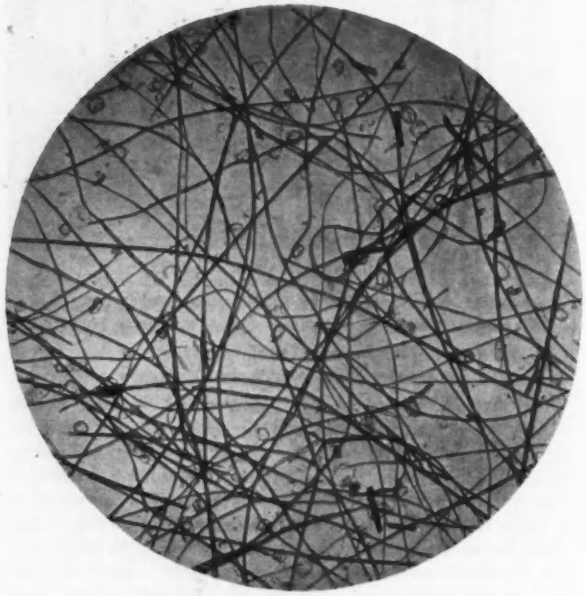
A complete report of this further work, entitled, "A Comparative Study of Paper Fillers," is being prepared for publication as a technologic paper.

5. Acidity Control in Papermaking

The importance of acidity in papermaking is well realized, the best results in the sizing, tinting, and filling processes, and in the formation of paper on the machine being dependent to a considerable extent upon the control of acidity within narrow limits. Indicator paper (litmus) is commonly used to detect acidity and titration to measure it. It is now believed that titration shows only the quantity of acid present and not its intensity. Since the activity of acid is determined by its intensity, a preferable method of measurement is determination of the hydrogen in concentration. Such determination has been made a regular part of all papermaking operations in the semi-commercial mill. A description of the method evolved will be published shortly.

6. Caroa' Fiber as a Papermaking Material

There is at the present time a scarcity of rag and rope stock for papermaking. Tests were made on caroa' fiber to determine its value for this purpose, especially for use with or substitution for rag and rope stock. The caroa' plant is native to eastern Brazil. Its leaf is about 4 feet long and from 1½ to 2 inches wide, being slightly larger than the leaf of the pineapple which, in certain parts of the world, notably the Philippine Islands, is extensively used for the manufacture of textiles. Although caroa' fiber is roughly extracted by the natives for fishing nets and coarse twines and ropes, it is at present little used commercially. The estimated cost of production makes its use for paper practical if its papermaking qualities are good. Three samples, each having received different treatment, were used in laboratory papermaking test. The caustic soda process was employed in preparing the pulp. There were made unbleached paper of unusual strength suitable for bag or wrapping purposes, and bleached paper that compared favorably with papers made of rag stock. The yield of pulp and amount of chemicals consumed were satisfactory. A comparative micrographic study of caroa' showed the fiber to be long and of small diameter. These properties tend to produce good felting of the fibers and give compactness and strength to the resulting sheet.



Caroa Fiber

An article giving the detailed results of this work was published in Paper Trade Journal, Vol. 80, No. 2, January 8, 1925.

7. Cotton Stalk

While it is quite well established that cotton stalk offers little possibility of general use as a fibrous raw material for papermaking, it was considered advisable, owing to constant inquiries concerning such use, to secure some additional data. Pulping and papermaking tests on both laboratory and semi-commercial scale were made. Previous tests have demonstrated that the manufacture of fine papers from this material is not feasible, hence the tests were confined to production of paper suitable for wrapping or board. For pulping, 25 per cent of caustic is required, milder treatment with less amount of caustic, with soda ash or with lime, giving unsatisfactory results. The yield of pulp is about 36 per cent. The paper produced is of poor quality, being weak and having a poor appearance. A detailed report of these tests is being prepared for publication.

III. Paper Specifications

1. Anti-tarnish Wrapping Paper

For the further investigation of the relation between the tarnishing of polished metals and the paper used to wrap them, additional samples of paper were obtained. After tests of a large number of samples in respect to composition, twenty-four different papers were chosen representative not only of anti-tarnish wrappings but also of all common types of papers. With the cooperation of the electro-chemistry section of the bureau, tarnishing tests are being made to confirm results previously obtained, and in addition the relation of tarnishing to the chemical constituents of the papers is being studied. The wide range of papers included in this further study should lead to definite conclusions as to what constituents of paper promote tarnishing and as to the formulation of methods of evaluating metal wrapping papers.

2. Definition of Newsprint Paper for Import Classification

Under the present tariff regulations newsprint is the only paper allowed free entry. It was found, however, that the existing definition classifying such paper was inadequate as many other kinds of paper were being admitted duty free as newsprint. In view of this situation the Bureau was requested by the Treasury Department to advise in respect to more specific definition.

Newsprint is a definite type of paper composed of 20 per cent unbleached sulphite fibre and 80 per cent of groundwood fiber; commonly weighing 32 pounds per 500 sheets, 24 x 36 inches in size; containing no rosin nor mineral filler, and having a low surface finish. To make the definition specific the maximum allowances for these properties would necessarily have to be stated To obtain data in this respect, samples representing the product of eleven different domestic and Canadian mills were tested. Some research was necessary to formulate satisfactory methods of determining finish and degree of sizing. For this specific purpose, the Ingersoll Glarimeter was found suitable for measuring the finish and both the Ground Glass method and the Valley Size Tester gave satisfactory results in determining degree of resin sizing. The average test values of the samples mentioned were: weight, 32 pounds; finish, 38.4 per cent gloss; degree of sizing: Ground Glass—2.8 seconds, Valley Size Tester—1.5 seconds; ash, 0.37 per cent. Based on these results, a definition was recommended to the Treasury Department which specified the following maximum allowances: Weight, 30 to 35 pounds, inclusive; finish, 50 per cent gloss; degree of sizing; Ground Glass, 10 seconds; Valley Size Tester, 5 seconds; ash, 2 per cent. These requirements have been officially adopted by the Treasury Department.

3. Waterproofed Caselining Papers

At the request of the Transportation Division, Bureau of Foreign and Domestic Commerce, tests of waterproof caselining papers used for overseas shipments were made and tentative specifications based on these tests submitted to that Bureau. These were published in its manual "Packing for Foreign Markets." As these tests showed that more satisfactory testing methods were required, this research was continued.

The main requirements of paper used for this purpose are waterproofness and strength. The type that has been found to give the most satisfactory service consists of two sheets of 30 pound No. 1 kraft paper cemented together with a layer of asphaltum, the finished paper having a weight of 90 pounds per 480 sheets, 24 x 36 inches in size. The test commonly employed for determining the water resistance was found to be inadequate and very misleading. This method consists in placing the sample under a water column and noting evidence of transuded moisture by observation of the under surface which is exposed to the air. Many papers, such as rosin sized kraft wrappings which have comparatively slight water resistance, withstood this test indefinitely for the reason that water is transmitted through the sheet so slowly that it evaporates without forming drops or other visible evidence of its presence. A sensitive but positive method of detecting transuded moisture—the "Ground Glass" method—was evolved. This is described above under the general discussion of testing permeability of papers. When tested by this method rosin sized kraft wrappings showed moisture transudation within a few minutes but the average asphaltum waterproofed caselining paper gave no transudation within a period of 24 hours or more. The combined bursting strength of the two basic kraft sheets has formerly been considered as a sufficient strength requirement. Tests of caselining papers as compared with tests of the basic kraft papers used in making them showed that the asphaltum lent an appreciable amount of strength. For this reason a bursting strength requirement higher than that of the combined strength of the two basic kraft sheets is recommended to insure the use of kraft paper of the best quality.

The final specifications recommended after this additional study are: Weight, 24 x 36, 480; 90 pounds; water resistance by Ground Glass method, not less than 24 hours; bursting strength, 70 points. It is thought that asphaltum of satisfactory quality is provided for by the severe water resistance test and by a requirement that before applying the water resistance test the specimen be creased, this revealing any tendency toward too great brittleness.

4. Window Envelope Paper

A study of glassine papers used for the outlook apertures of window envelopes was completed last year. Good transparency and minimum gloss are necessary to expedite handling of mail and avoid undue eye strain on the part of postal clerks. The general quality of the better grades of glassine used for the purpose is very good. Such papers were found to have a maximum opacity of 0.20 contrast ratio (determined with a Martens photometer), and a maximum gloss of 75 per cent. During the present year the study has been extended to the one-piece type of window envelope in which the outlook aperture is a part of the body of the envelope, this portion being made transparent by chemical treatment. Additional data are also being obtained in respect to agreement of gloss and transparency tests by different laboratories.

5. Paper Towels

Additional data obtained in respect to evaluating paper towels indicate that the quality can be determined satisfactorily by finding the bursting strength and the absorbency. Good strength is essential to prevent disintegration during use and rapid absorption of water is necessary to expedite the drying operation. Absorbency may be determined satisfactorily by placing a drop (0.1 cc) of water on the surface of the towel and noting the time required for complete absorption, as indicated by no further reflection of light from the water. Results of tests of a large variety of towels from different manufacturers showed a bursting strength range of from 8 to 35 points and an absorption time range of from 4 seconds to over 10 minutes. It is believed that towels having a maximum weight of 42 pounds, on a basis of 500 sheets 25 x 40 inches in size; a bursting strength of not less than 8 points; and an absorption time of not over 180 seconds, will give satisfactory service.

IV. Miscellaneous

In addition to the main researches followed as a part of the regular program, several shorter investigations were made, a brief description of the most important following:

1. Durability of Kraft Paper

Tests were requested by the War Department, of kraft wrapping papers that had been stored for a period of five to nine years, to find their present condition. Forty samples representing twenty-three different lots were taken for test. Of the twenty-three lots tested, fifteen were as strong as newly made kraft, having a bursting strength of nearly one point per pound of weight and a folding endurance of over 1000 double folds. Four lots had approximately 80 per cent of this strength. The remaining four lots were the only ones very deficient in strength and it is possible these were originally deficient in strength, as microscopical examination indicated they were not true kraft papers. These tests, as well as others of a similar nature that

have been made, indicate that kraft fiber is as durable as other wood fibers.

2. INCREASE OF WATER RESISTANCE OF CHIPBOARD WITH AGE

The water resistance of chipboard used to make gypsum wall board is of importance in the manufacturing process. A manufacturer noted that apparently the water resistance of such board increased with age. At his request the Bureau tested samples at monthly intervals and found a uniform increase in water resistance. This is thought to be due to chemical changes in the groundwood fiber present or induced by this fiber constituent.

3. WRINKLING OF PAPER WINDOW TRANSPARENCIES

Lithographed paper window signs are used extensively in display windows for advertising purposes. Such signs are usually made by lithographing a design on paper, applying the waterproofing preparation and finally coating both sides with an adhesive. The sign is applied to the glass by moistening with water and pressing on. Trouble has been experienced with such signs wrinkling and peeling away from the glass, this occurring only in the case of signs applied to outside windows during very cold weather. Tests showed that this trouble was due not directly to low temperature but to the effect of moisture condensed upon the signs by changes in atmospheric temperature. If the signs have time to dry thoroughly before exposure to high moisture conditions, little wrinkling occurs.

4. PAPER SPECIFICATIONS

In addition to assistance given the Federal Specifications Board, Government Printing Office, and Post Office Department as regards service on committees representing these departments, in formulating paper specifications, a considerable amount of laboratory work was done to assist these and other departments in formulation of new specifications. Paper for which new specifications were written included stamped envelope, folders, photographic blotting, desk blotter, insulating for telephone cables, book, enameled blotting, newsprint, lithograph coated, index, coated blank, cardboard, supercalendered book, bristol board, coated book, gummed. carbon, recorder tape and book label.

Lockport Paper Co. to Rebuild Immediately

LOCKPORT, N. Y., September 14, 1925.—C. S. Jackson, general sales manager of the Lockport Paper Company whose plant was visited by fire September 11, says that plans are being made to immediately resume operations in the mill. The burned part of the big mill will be replaced as quickly as possible so that little delay will be experienced in filling orders. As to the cause of the fire, Mr. Jackson said inspectors are now at work in an effort to find a cause for it. Yesterday, he said, the story advanced was that two men who claimed to have been at work in the west end of the stock and finishing department were filling a can of liquid asphalt cement from a large receptacle when it suddenly ignited and spread with such rapidity that the two dozen or more workmen in part of the plant on both the first and second floors were forced to make a hasty exit. The inspectors believe that if the fire originated in the west end of the building the flames must be carried directly to the east end of the structure because that part suffered the most.

As to a possible estimate of the loss by fire, the officials of the company, Mr. Jackson said, were not prepared as yet to make any announcement until after a complete check-up has been made. No idea as to the exact quantity of finished stock in the building can be formed, as the last inventory was made a month ago. The mill had a capacity of one carload of shingles an hour.

Besides the stock and other material in the structure, the only equipment it contained were two shingle cutters, all the valuable machines used in the mill being in the building known as the machine room, west of the stock and finishing section and separated from it by a heavy fire wall. As a result of this protection, no smoke or fire penetrated into that structure, so that operations will not be interrupted there.

TECHNICAL SECTION, PAGE 130

Holland a Paper Exporting Country

Holland is more of a paper exporting than importing country, owing principally to the cheapness with which paper products of straw can be produced and the sustained demand for these in contiguous countries, according to the Paper Division, Department of Commerce. In 1922 Holland exported 248,439 short tons of paper, nearly 60 per cent of which went to Great Britain. In 1923 almost 271,000 short tons were exported, Great Britain taking nearly 195,000 short tons. A further increase was noted in 1924 when over 300,000 short tons were exported, approximately 221,000 tons of which were taken by the United Kingdom. Most of this in each instance was strawboard with a small percentage of newsprint, writing, and book papers. Other countries which have consistently taken smaller quantities of Dutch strawboard and straw paper include Belgium, France, Australia, India, the United States and Argentine.

Imports of paper into Holland are limited very largely to varieties not manufactured within the borders of the country, and include principally wrappings, writing and book, news print, and considerably lesser quantities of vegetable parchment, hanging, and board other than straw. In 1922 Holland's total imports of paper amounted to 79,789 short tons, of which Germany furnished over 56,000 tons. In 1923 these imports had increased to over 89,000 short tons, Germany furnishing in that year 71,681 tons. In 1924 a slight decrease to 88,900 short tons was noted, but the quantity furnished by Germany increased still further to 73,600 short tons. In each year the varieties supplied by Germany were limited almost entirely to sulphite wrappings, writing, and book papers, with smaller amounts of news print, only very small quantities of other varieties being entered from that country.

At the present time no data on Dutch paper production are available except for the years 1920 to 1922, inclusive, and during those periods only for the four large groups comprising approximately 85 to 90 per cent of the industry. News print increased from 366,000 short tons in 1920 to 507,000 short tons in 1922. Book and writing papers free from groundwood increased from 137,800 short tons in 1920 to well over 212,000 short tons in 1922, although there was a marked decrease in 1921. The production of wrapping paper, including vegetable parchments amounted to 201,700 short tons in 1920, but increased to 315,250 short tons in 1922. On the other hand, the amount of printing and writing papers containing groundwood produced in 1920 was 58,400 short tons as against 49,600 short tons in 1922.

The production of strawboard has not increased so rapidly as that of other varieties of paper and paper products. In 1922 the total strawboard produced amounted to 134,700 short tons.

The future of the paper and board industry in Holland appears to be fairly certain. Assuming that labor and financial conditions will remain reasonably stable, it is believed that the production and exportation of the cheaper grades of printing, including news, straw, strawboard, and wrappings, will increase. In 1924 the Dutch mills met demands averaging 25 per cent greater than in 1923, and the present indications are that similar proportional increases in the future would be met with equal ease, especially in the field for those products in which the Dutch mills have specialized.

As a source of supply for raw materials for exportation to other manufacturing countries during the next quarter or half century, it is possible that base stocks other than mechanical or chemical wood pulp will be obtainable in quantities over sustained periods of time.

Springfield Paper Co. to Move

SPRINGFIELD, Mass., September 21, 1925.—Springfield Paper and Manufacturing Company will move October 1 from 52 Taylor street to 19-23 Market street, where alterations are being made to provide for office, sales and shipping rooms on the ground floor and storehouse on the second floor. A new elevator is being installed. M. Mazer heads the concern.

Section of the

COST ASSOCIATION OF THE PAPER INDUSTRY

Affiliated with

THE AMERICAN PAPER AND PULP ASSOCIATION

Conducted by THOS. J. BURKE, C.A., Sec-Treas

Cost Figures From the Viewpoint of the Factory Executive*

By J. Ernest Andrew

In thinking over the subject given me I have found a great deal of difficulty in picking out a good starting point. However, I will try to group my thoughts under two main headings: First, I want to talk about cost figures, and then I want to present some points for the cost figurer, which I hope will be helpful.

A favorable regard for real cost figures came early in my experience. I still remember being told by a home-brewed cost man of those days—he is not present; he is not "costing" any more—that the small department I was then in charge of had a higher overhead than that of another department comparable with my own.

True to the instincts of every shop man of every age and in every factory, I went stamping to the mat with those insinuations; but it was a very unsatisfactory fray. I did not know an "overhead" when I met one, and the "coster" would introduce nothing to clear the fog. That experience left me with a cost complex in my system, so that in coming here tonight I am determined to urge you to lock your technical terms in the recesses of your mind when talking costs to shop men. The difficulty encountered here is that the terms you use are not technical to you. They are the language of your councils, your books, your discussions, and, worse yet, they are the terms you think in; and to translate them into shirt-sleeve shop talk will not be easy for you, but it will make your message understandable to the other fellow.

Then the figures must mean something. By that I mean you will find the average shop man much keener than you realize to put to work the information you have gathered together. But he is not very much interested in the water that flowed over the dam last year, or last month, unless it helps to solve present problems. The reason is this. Most shop men are loaded up with mechanical problems, personnel problems, production schedules, etc., and to recall the ghosts of yesterday seems but an added burden to a full day.

To accelerate cost results of the past so that they will have a use in the solution of the problems of today is probably one of your most vexatious problems.

An Illustration

Let me illustrate what I mean. A mill not many miles from here was put in operation a few years ago. One man undertook to construct, operate, manage, engineer, and purchase in addition to the work of figuring costs. Everyone else in the organization had to take his "say so," and even an excellent "says so" is not very satisfactory in many cases. The result was confusion, doubt, bitterness, jealousy, and, eventually, a different arrangement. Under the new arrangement an up-to-date cost system was installed. It has required about two years to make it work smoothly, but this week the superintendent of that mill told me he liked the new system and was working even now with the Cost Department to perfect it still further. But the main reason why he liked the new system was because five minutes after an order was completed he could get his costs. This means that any shortcomings or overreachings can be investigated immediately and cures instituted for the benefit of work still uncompleted.

Here is another illustration of the value of immediateness in cost work. I sat in an important conference in a New York hotel one day this month, and the advisability of cancellation of an uncompleted job came up. At 11 A. M. a 'phone call over the long distance was put through, and at 2:15 P. M. the exact cost of that job to date was 'phoned back to the conference and the job was continued.

The value of such information, obtainable still hot off the griddle, is very great; not only for the sake of the information itself, but for the influence it has on the mind of the customer. It has been well said that appreciation is the first rule of toleration.

Another point I want to make is that good sound cost figures make snap judgment unnecessary and undesirable.

The boss who listens to the honeyed phrases of his workers can easily work a surprising injustice in his department, while the boss who can secure dependable cost data can be a model of justice. The superintendent who comes stalking into a department unheralded may see the biggest "dumbell" on the force pegging away industriously, while the brightest man in the room may for the first time in a week be caught conversing with some one about the coming eclipse, or some other topic. Summary action may follow to assuage the "super's" ruffled feelings, and the age-old sore of capital and labor is prodded once more. A study of every man's actual record as set forth by production or cost records might be very wholesome reading to a superintendent of that kind.

So far in this paper we have discussed three phases of cost figures.

1—Simplicity.

2—Making them immediately available.

* From the National Assn. of Cost Accountants Bulletin.

3—Using them to avoid snap judgment.

Another Point Considered

Another point should now be considered, viz:—that of the completeness of cost records. There is an old pun that half knowing a thing is worse than no knowledge and I believe it is right. Some time ago I was "on the carpet"—you'll never get so high in business but that some one can spread a carpet for you—because a certain foreman's overhead was mounting month by month, and for a while I was nonplussed. I will let you in on a great secret; if you are ever nonplussed, ask for time. Time will cure anything if you get enough of it. Time will prove anything. So I asked for time to consider the matter, and time showed me that said foreman had improved his mechanical process so that thing like sixteen men out of fifty had been eliminated. Of course, the divisor in the arithmetical process had gone down and the quotient up. But the point is that this did not show in the figures. They were right as figures; they were wrong as a report. Perhaps it is not the part of cost accountants to analyze and interpret the figures they amass. But I plead for a completeness in the figures and records.

Another phase of this completeness is that of frankness. I have been making an interesting experiment in frankness It has had to do with the pay-roll, but serves to illustrate the point. In one of our plants it has been the custom for a long time to be quite reticent about telling the foreman the wage rates of the various employees under his control. For three years now, I have taken one of these foremen aside and given him complete data regarding every person in his department. The result has been that he has from time to time made recommendations that have been adopted, and today his department is a model for regularity, peace, and industry, and the rest of us scarcely ever hear a word about raises from any of his employees.

Do not withhold the full story of what your records show from the man who makes those records. How ridiculous it is to employ a man to cut up your raw material, direct your labor, influence your overhead, and make your profits or losses and then not relate to him through the cost records the actual results of his own actions. Of course, if he cannot give them honorable hearing you have an excellent reason for appointing his successor.

The Cost Figurer

Now, I want to say something with regard to the cost figurer himself. Of course, he must learn his trade, master his technique, know his business from all sides; but that is not all. He must avoid perhaps more than any one else the condition known as the swelled head. Not long ago, in reading through a copy of the Purchasing Agent, the mouthpiece of that department of business, I found set forth there some excellent reasons why the purchasing agent should direct the affairs of the entire organization he serves. I defy you to go to any engineers' gathering without coming away quite certain that the engineers should direct the course of action. I have had this paper in mind for some time, and the other day I was in a distant city and sat at table with a group of industrialists, a capitalist, a banker, two or three engineers, and others. I spoke of this vainglorious attitude on the part of many groups of professional men and was told that a very large corporation, having a branch factory in this state, is now having its policies dictated by its accountants. Already several men of many years' standing have been dismissed, the Connecticut Branch is now being combed because it has shown a loss, and—get this—some one "in the know" admits that as soon as the accountants secure complete control, they will shift certain depreciations or "doctor" certain losses in order to show a profit and so justify their control.

I do not need to elaborate on this; you have already condemned it. But it points toward the necessity of working honor into your actions. The point is not altogether that business integrity is at stake in the instance cited, but that internal dissention has arisen due to an overbalance in the proper organization of that concern.

If any of you are bitten with the "bug" of personal glory and an insatiable desire to get personal credit for your work, let me point to a very interesting bit of advertising now being done by Hupmobile. Several department heads have been photographed and printed in their ads, but none of their names are shown. The advertisement reads that each man has sunk his personality into the organization and that the organization as a whole is behind the Hupmobile Company. Can your concern advertise that?

I realize quite thoroughly that you each have serious problems in trying to sell cost work to your organization. It is perhaps especially difficult to sell to the factory. Let me close by recalling from the old reader we had in common school the best story of salesmanship I have ever read.

The North Wind and the Sun were arguing one day about their respective abilities. The North Wind was sure he was the more powerful, but the Sun was unwilling to admit it, so a contest was proposed. Looking down on the earth they saw a wayfaring man with a heavy coat on, and they agreed that whoever could get the coat off was the more powerful. So the North Wind tried first. He puffed himself up and lashed himself into a fury and descended upon the poor man with wintry gusts. The man turned up his coat collar, buttoned his coat all the tighter, while he shivered in the wintry blast. At last the North Wind became exhausted and told the Sun to try his hand. The Sun came peeking out from behind a cloud and sent his beams down upon the tightly-cloaked man. It was not long before the man began to feel uncomfortable. First he turned down his collar, then he unbuttoned his coat, but the insistent rays of the Sun kept pouring down upon him, and before long the man pulled off his coat and the Sun had won.

A spirit of warm helpfulness rather than blustering vainglory accomplishes much.

News of the Oregon Trade

PORTLAND, Ore., September 17, 1925.—James Frederick Alton, 56, whose home was at Bolton, was killed; Oscar May, 51, Oregon City, was taken to the Oregon City hospital with a broken jaw bone, broken collar bone, chest injuries and possibly internal injuries, and Ed. Carpenter, 30, of Willamette, was cut and bruised about the head and body as the result of an accident at the Crown-Willamette company's plant at West Lynn, last week. The three men were millwrights and started to repair the chipper conveyor, when the mill closed down about 11 o'clock. They were supposed to have finished the work before 12.30 o'clock, it was said. Believing that the men had completed the work, fellow employees started the machinery at 12:30 o'clock. The chipper caught the three millwrights when it started to revolve. Alton was crushed by the buckets on the chipper and death was instantaneous. Mr. May and Mr. Carpenter working beside Alton escaped with serious injuries.

W. S. McLain, of Seattle, representative of the Zellerbach Paper Company, is touring the northwest and other Pacific coast points in the interests of his company.

C. F. Beyerl, Salem, Oregon, has received a permit to sell $40,000 preferred stock in the Western Paper converting company in that city.

Carter Rice & Co., Portland, Oregon, dealers in wholesale paper products, have removed from their former location at 43 Fourth street, to new headquarters at 71 Front street.

Will Take Out Much Pulpwood

It is understood that the eastern lands department of the Canadian National Railways has disposed of 200,000 acres of timber and pulp wood holdings as well as camps, saw mill, rossing plant, etc., at Foleyet, Ont., to the Acme Timber Company, of Sudbury, composed of D. H. Haight and Alex Ainslee, who have been handling pulp wood for some time. The Acme Timber Company will cut several thousand cords of pulp wood for domestic use and export.

The Cost of Overhead*

The problem of overhead is of a two-fold character. It is partly a question of policy, and partly of accounting method. There is no rigid line of separation between the two aspects of the overhead problem, but as far as possible this leaflet is limited to a consideration of overhead as a question of policy.

Overhead consists of those expenses of a business which cannot be directly traced to a product, job or process, or which it would be too costly to so directly trace. Aside from this, a substantial element of overhead has this characteristic—the expense is relatively fixed. It does not respond to increased sales, nor does it decrease when sales decline. Of this nature are the so-called fixed expenses: rent, insurance on equipment and buildings, taxes and depreciation. It is from the relatively fixed expenses that the problem of overhead arises.

Each Department Self-Sustaining

Modern accounting, and in particular cost accounting, is founded on the theory that each phase of a business shall be self-sustaining and independently profit making. Much energy and ingenuity have been spent in devising methods of equitably allocating and absorbing overhead expenses. Floor space is measured; accurate account is kept of horse power and kilowatt hour consumption; machines are valued and segregated by departments; a record is kept of man and machine hours and of units of production; all to the end that no dollar of overhead belonging in one place may be wrongfully assessed against another.

Accepting Orders on Incomplete Costs

Rigid observance of the principle that all phases of an enterprise shall be independently profit making, would require the refusal of orders that did not cover the full charge for material, labor, and overhead But it appears profitable to businessmen, under given circumstances, to accept orders that provide for only a share of the overhead. Inasmuch as a part of the overhead proceeds day after day, it represents an irretrievable loss when not absorbed in production For specified times, for given products, or for selected territory, a case can be made out for accepting orders that will take care of material and labor and part of the overhead.

Just a few illustrations to make our point clear:

The clothing industry has two seasons between which there is usually a gap. A large manufacturer of waists makes special prices to jobbers, which prices cover material, labor, factory overhead, and part of the selling overhead. These orders in themselves are not profitable. But what would happen if they were not sought? The full load of overhead would go on day by day; there would be no production to carry it; and the overhead expenses would be a total loss. By specifying a reduced price, even though it does not take care of the full burden of overhead, loss is reduced, the factory is kept in operation and the workers are given more continuous employment.

A manufacturer of metal products produces a range which is profitable, and a radiator which is unprofitable Shall he give up the radiator end of the business? If he did, a considerable amount of the overhead now carried by that part of the business would be chargeable against the manufacture of ranges, which amount of overhead is greatly in excess of the amount lost upon the radiator products. Thus business, in itself unprofitable, may contribute to the net profits of the business.

The internal situation of a plant may encourage acceptance of orders that do not provide for the full burden of cost, but the practice, if continued, may and undoubtedly will invite reprisals. The manufacturer of ranges who quotes a price upon radiators, his sideline, based upon incomplete costs, may expect in time similar treatment from manufacturers, for whom ranges are sidelines. The manufacturer of silk dresses who markets specific style numbers below cost, may find some of his own popular creations subjected to the same kind of disconcerting competition. Thus the practice of basing prices upon incomplete costs, which can be justified by the requirements of single enterprises, may tend to demoralize an industry.

Excess Capacity

There is another phase of essentially the same problem. Broadly speaking, the amount of overhead expenses does not increase in proportion to increased production. The numerator of the overhead fraction, that is—the dollar of expense—is relatively stationary. It is the denominator—the volume of production—which fluctuates most widely. The tendency, then, is for lower unit costs as production increases. Unit costs of overhead are not absolute or determined. They yield to the pressure of increased production.

This fact the business man clearly perceives. He knows that his costs will be lowest when his production is at capacity, and so he is tempted to establish prices so low that they will encourage capacity sales, which by driving down the unit overhead costs alone make his selling prices profitable. The most successful of practitioners of this mode of operation stated the point substantially as follows:

"I set my prices below my lowest cost and make my costs conform to my selling prices."

It is well to admit that this method may prove very successful for individual manufacturers and for definite periods, but it is apt to be disastrous when sales do not come up to expectations. Even if it were to solve the problem of the single manufacturer, the question arises as to what is to become of the rest of the enterprises engaged in an industry. Nothing is solved when a small group of manufacturers in an industry make a profit and the rest suffer; when one or two are working 100 per cent capacity and the others are practically idle.

Using Normal Production

An industry is one great common pool of productive resources and the ultimate goal is the complete utilization of the entire equipment of an industry. There is, of course, such a condition as a ridiculous excess of productive equipment and where that is the case, the sooner it is liquidated the better for all concerned. There is, on the other hand, such a thing as a reserve of machinery, as there is a labor reserve, to take care of peaks of production, and our economic system must take note of and provide for both.

From the accounting point of view, this is accomplished by basing overhead, not on capacity, but on normal or standard production, a production that can be maintained year in and year out. When the production is above normal, the standard charges will be more than absorbed so that a reserve will be provided to take care of times when production is light. It is important that all overhead expenses be complete; that they be properly charged against departments and that they be equitably absorbed in production. But more important than all of this is that overhead should be based on normal production and thus provide a cushion for the interruptions intermittently occurring in industry. This most important factor of the overhead problem is frequently overlooked and often ignored.

Thus one company writes:

"We do not allow any margin for unused capacity inasmuch as we have none since our product is taken by only two companies over long period contracts."

(This, of course, makes no provision for what would happen if one of the two customers should go elsewhere.)

A second company writes:

* From Policyholders' Service Bureau, Metropolitan Life Ins. Co.

"We do not work on the method of allowing a margin for unused capacity in determining overhead of our Factory. At such times when we are not running at full capacity our overhead burden is greater and by using a method of comparison with the previous months we at all times know the reason for the increase or decrease in overhead rate. We have never believed in trying to base our costs on a normal capacity of our Plant for the reason that our business fluctuates from month to month."

(Yet, these very fluctuations in business have made it necessary to have some standard for overhead which is found in the normal rate of production.)

Contrast this with the practice of a third company:

"We try to set our overhead rate at the beginning of each year on such a basis that during periods of production above normal, a reserve would be accumulated against which unabsorbed burden during periods of less than normal production could be charged."

And the recommendations of the Electrical Manufacturers' Council in its standard accounting and cost system for the Electrical Manufacturing Industry:

"To avoid violent fluctuations in the percentages and ratios of indirect expenses, from one period to another, as the result of pronounced increases or decreases in the volume of production, normal or mean averages of percentages or ratios should be calculated for a cycle of years."

Is Overhead an Evil?

It is not unusual to regard overhead as an unmitigated evil, as a something which threatens to destroy fair profits. The very term "burden," frequently used to describe overhead, is an indication of this attitude. An enterprise, by this conception, staggers under the load when the overhead is 110 per cent of productive labor, and is on the highway to prosperity when the overhead is only 25 per cent. As a matter of fact there is no such necessary relation between the overhead percentage and the favorable or unfavorable situation of an enterprise.

Overhead is an outgrowth of a mode of organization. When an enterprise is small, with a product which is largely hand-served, its overhead is naturally light. A peanut vendor pays something for the rental of his equipment, but about there his overhead stops. As an enterprise develops, it gradually takes on overhead, or rather it takes on overhead so that it may develop. Every substitution of the machine for hand labor means an increase in the overhead. Every time a mechanical stoker is substituted for hand firing, or a conveyor belt for hand carrying, or an overhead crane for trundling, the overhead expenses increase, while the total costs may decrease. American industry is committed to a high overhead precisely because it is committed to quantity production at low total operating cost.

Whether it is profitable to take on additional overhead is susceptible of accurate measurement. The maximum investment justified for new labor-saving equipment is the ratio between the yearly savings and the yearly allowance for interest on investment, insurance, depreciation and upkeep of the added equipment. On the credit side are the yearly savings in direct cost of labor, in some of the fixed charges, and in earnings from increased production. From these savings should be deducted the yearly cost of power, supplies and other items, and the net figure multiplied by the percentage of the year during which the equipment will be employed.

To determine the yearly profit from the operation of mechanical equipment, the yearly cost of maintenance, which consists of the initial cost of the equipment times the sum of the percentages allowed for interest on investment, insurance, taxes, upkeep, depreciation and obsolescence, should be deducted from the yearly savings, as aforesaid.

In a recent number of "Mechanical Engineering," there is an application of the foregoing principles: "Assume that the handling of miscellaneous materials about a factory which has formerly been done by four men, receiving $3.50 per day each, or, allowing 300 days per year, at an annual direct cost of $4,200, can be done by one man operating an electrical storage battery industrial truck at a direct labor cost of $1,050 per year, thus effecting a saving at the rate of $3,150 per year in direct labor cost.

"Assume also that through the greater promptness in moving materials and the more continuous operation of machines, there is an increase in earnings due to increased production, valued at $650 per year; also, that the labor involved, being counted as indirect, carries a fixed charge or burden of 10 per cent. In actual practice, the plant operates 240 days per year or 80 per cent of the time. The various factors are estimated as follows:

Percentage allowance on investment	6
Percentage allowance to provide for insurance and taxes	4
Percentage allowance to provide for upkeep	20
Percentage allowance to provide for depreciation and obsolescence	25
Yearly cost of power, supplies, and other items which are consumed	$ 450
Yearly saving in direct cost of labor	$3,150
Yearly saving or earnings through increased production	$ 650
Yearly saving or earnings through increased production	$ 650
Percentage of year during which equipment will be employed	80

The maximum justified investment in dollars will therefore be:

$$\frac{(\$3{,}150 + \$315 + \$650 - \$450) \times 80\%}{(6\% + 4\% + 20\% + 25\%) \text{ or } 55\%} = \$5{,}331$$

"This indicates that the equipment costing any sum below $5,331 will earn some profit above interest on investment and maintenance.

"Assume that an electric storage-battery industrial truck will meet the condition stated and that its cost will be $2,200, then the yearly cost to maintain equipment ready for operation, exclusive of labor, will be $2,200 × 55% = $1,210. Then the profit from operation of the mechanical equipment becomes such $1,210 deducted from the saving on direct labor, $3,150, plus the yearly saving on fixed charges of $315, plus the yearly saving or earning through increased production of $650, less the cost of supplies, power and other items which are consumed of $450, all multiplied by factor of equipment used of 80 per cent. This leaves a profit of $1,722. The profit of $1,722 represents an annual earning upon the initial investment of $2,200 over all items of cost of over 78 per cent. The forgoing formulas for testing the value of labor-saving equipment are presented for whatever suggestive value they may have."

Overhead Ratio

While it is true that a large overhead percentage is not in itself alarming nor necessarily an unfavorable sign, it is a fact that in any particular plant where operations have become fairly well established, there is a tendency for a normal relationship to be assumed between direct charges and overhead expenses, and it is furthermore evident that an increase in this relationship between direct charges and overhead may represent a situation that should be remedied if possible.

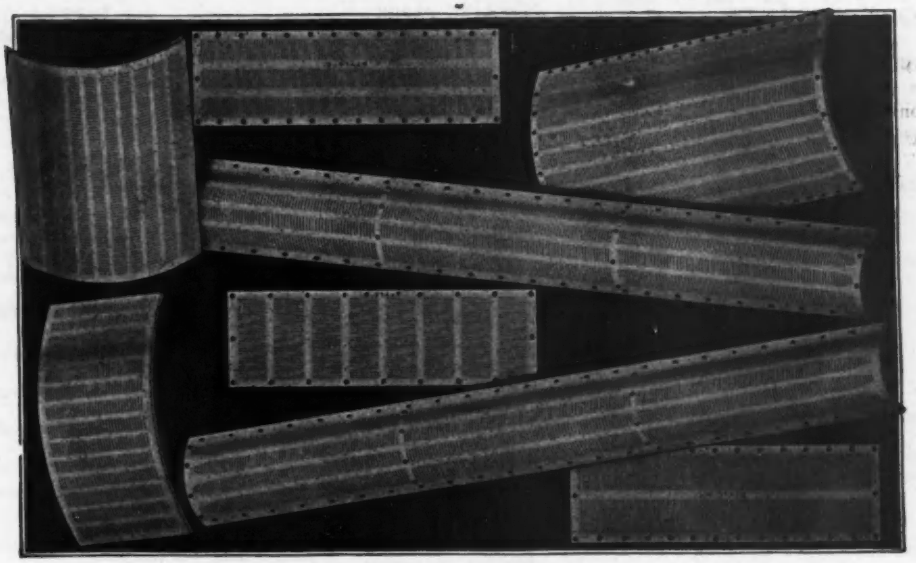
A correct understanding of overhead, therefore, requires, not only a sound policy, but sound accounting methods. The accounting technique that goes with the control of overhead is beyond the scope of this leaflet, but the Policyholders' Service Bureau welcomes any inquiries upon overhead bearing upon questions either of policy or of accounting methods.

Cost Section

Meek Paper Co. Resumes Business

KNOXVILLE, Ky., September 21, 1925.—Frank Meek, who because of ill health discontinued his wholesale paper business here four years ago, has recovered his health and resumed business at his old location, 122 W. Jackson avenue, under the style of the Meek Paper Company. T. G. Herman, who was with Mr. Meek in the paper business before, is again associated with him. The Meek Paper Company occupies four floors at 123 W. Jackson avenue.

WILLIAM A. HARDY & SONS CO.



FITCHBURG, MASSACHUSETTS, U. S. A.

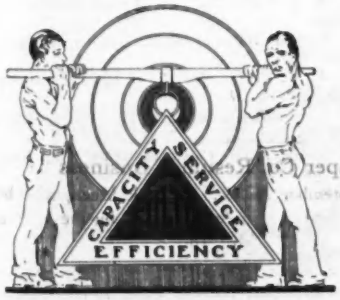
DRY PAPER EFFICIENTLY

The Fulton Dryer Drainage System

—Increased Production
—Decreased steam pressure on the dryers
—Reduced steam cost for drying

Better Sheet—Better Finish—Less Shrinkage

—and cockling prevented by drying with graduated temperature—Less pressure or vacuum on paper machine dryers.



We will gladly refer you to mills using the Fulton System and making the same grade of paper as you. They will tell you their experience with the Fulton System.

U. S. Patents Dec. 10, 1919, and June 7, 1921. Canadian Patents July 6, 1920, also patents pending

Fulton Engineering Co.

MIDDLETOWN, OHIO

Imports of Paper and Paper Stock

NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 19, 1925

SUMMARY

News print .....2013 rolls
Wrapping paper .....42 rolls, 7 cs., 27 bls.
Printing paper .....488 rolls, 293 cs.
Wall paper .....142 rolls, 12 bls., 6 cs.
Cigarette paper .....60 cs.
Packing paper .....259 bls.
Kraft paper .....228 rolls
Filter paper .....7 cs.
Tracing paper .....2 cs.
Surface coated paper .....185 cs.
Baryta coated paper .....47 cs.
Metal coated paper .....4 cs.
Drawing paper .....53 cs.
Writing paper .....44 cs.
Tissue paper .....7 cs.
Cover paper .....66 cs.
Delcomania paper .....16 cs.
Fancy paper .....5 cs.
Bowl paper .....13 cs.
Gallic paper .....7 cs.
Basic paper .....7 cs.
Paper boxes .....13 cs.
Straw board .....30 rolls
Miscellaneous .....492 bls., 362 cs., 2829 rolls

CIGARETTE PAPER

Miguel Costas & Miguel, Fenchurch, Barcelona, 2 cs.
F. P. Gaskell & Co., Suffren, Havre, 28 cs.
Standard Products Corp., Rochambeau, Havre, 30 cs.

WALL PAPER

W. H. S. Lloyd & Co., Carmania, Liverpool, 12 bls.
Thomas & Pierson, Berengaria, Southampton, 1 cs.
Janeway & Carpender, Kolsnaren, Kotka, 142 rolls.
Bendix Paper Co., Resolute, Hamburg, 4 cs.
Pitt & Scott, Mauretania, Southampton, 1 cs.

PAPER HANGINGS

A. C. Dodman, Jr., Inc., Carmania, Liverpool, 5 bls.
W. H. S. Lloyd & Co., Minnekahda, London, 21 bls.
W. H. S. Lloyd & Co., Minnekahda, London, 13 cs.

NEWS PRINT

Parsons & Whittemore, Inc., Kolsnaren, Kotka, 1845 rolls.
National City Bank Lutzow, Bremen, 168 rolls.

PRINTING PAPER

P. Puttman, Belgenland, Antwerp, 12 cs.
B. F. Drakenfeld & Co., Carmania, Liverpool, 34 cs.
Merchants Products Co., Mount Clay, Hamburg, 5 cs.
C. Steiner, Mount Clay, Hamburg, 27 cs.
Martin & Bechtold, Lutzow, Bremen, 25 cs.
Maurice O'Meara Co., Kolsnaren, Kotka, 423 rolls.
H. Reeve Angel & Co., Inc., Kolsnaren, Kotka, 178 cs.
Keuffel & Esser, Resolute, Hamburg, 65 rolls.
Titan Shipping Co., Mauretania, Southampton, 12 cs.

WRAPPING PAPER

Safety Insulated Wire & Cable Co., California, Glasgow, 42 rolls.
F. L. Kraemer & Co., Belgenland, Antwerp, 7 cs.
International Accep. Bank, Resolute, Hamburg, 27 bls.

PACKING PAPER

J. P. Heferman Paper Co., Drottningholm, Gothenburg, 106 bls.
J. P. Heferman Paper Co., Resolute, Hamburg, 153 bls.

KRAFT PAPER

Arkell Safety Bag Co., Drottningholm, Gothenburg, 228 rolls.

FILTER PAPER

H. Reeve Angel & Co., Inc., Amer. Shipper, London, 6 cs.
Gallagher & Ascher, Berengaria, Southampton, 1 cs.

TRACING PAPER

E. Dietzgen & Co., Tyne Maru, Hamburg, 2 cs.

SURFACE COATED PAPER

P. C. Zuhlke, Belgenland, Antwerp, 63 cs.
P. Puttman, Belgenland, Antwerp, 15 cs.
Gevaert Co. of America, Belgenland, Antwerp, 98 cs.
Phoenix Shipping Co., Mount Clay, Hamburg, 9 cs.

BARYTA COATED PAPER

Globe Shipping Co., Lutzow, Bremen, 47 cs.

METAL COATED PAPER

C. B. Richard & Co., Lutzow, Bremen, 4 cs.

GOLD COATED PAPER

C. B. Richard & Co., Lutzow, Bremen, 1 cs.

DRAWING PAPER

Keuffel & Esser, Carmania, Liverpool, 1 cs.
H. Reeve Angel & Co., Inc., Amer. Shipper, London, 2 cs.
Keuffel & Esser, Resolute, Hamburg, 50 cs.

NOTE PAPER AND ENVELOPES

Independent Forwarding Co., Carmania, Liverpool, 115 cs.

ENVELOPES

H. Reeve Angel & Co., Inc., Amer. Shipper, London, 2 cs.

WRITING PAPER

B. Altman & Co., Berengaria, Southampton, 1 cs.
Guibout freres, Olympic, Havre, 15 cs.
Globe Shipping Co., Rochambeau, Havre, 24 cs.
Distinctive Writing Paper Co., Mauretania, Havre, 1 cs.
R. F. Downing & Co., Mauretania, Havre, 1 cs.
Distinctive Writing Paper Co., Rochambeau, Havre, 2 cs.

TISSUE PAPER

Schenckers, Inc., Mount Clay, Hamburg, 7 cs.

COVER PAPER

International Forwarding Co., Mount Clay, Hamburg, 66 cs.

DECALCOMANIA PAPER

L. A. Consmiller, Lutzow, Bremen, 8 cs.
Phoenix Shipping Co., Pr. Roosevelt, Bremen, 8 cs.

TRANSFER PAPER

Atlantic Forwarding Co., Pr. Roosevelt, Bremen, 1 cs.

FANCY PAPER

Whiting & Patterson, Inc., Mauretania, Southampton, 5 cs.

BOWL PAPER

C. A. Johnson, Carmania, Liverpool, 13 cs.

GALLIC PAPER

Keuffel & Esser, Carmania, Liverpool, 7 cs.

BASIC PAPER

Globe Shipping Co., Lutzow, Bremen, 7 cs.

PAPER BOXES

Schall & Co., Arabic, Hamburg, 13 cs.

STRAW BOARD

Domestic Mills Paper Co., Innoko, Rotterdam, 30 rolls.

PAPER

Japan Paper Co., Fenchurch, Barcelona, 4 cs.
P. C. Zuhlke, Belgenland, Antwerp, 55 cs.
F. R. Arnold & Co., Berengaria, London, 1 cs.
Mugler & Umlauf, Drottningholm, Gothenburg, 100 bls.
Mugler & Umlauf, Drottningholm, Gothenburg, 192 rolls.
The Borregaard Co., Inc., Drottningholm, Gothenburg, 2203 rolls.
The Borregaard Co., Inc., Drottningholm, Gothenburg, 230 bls.
Gilbert Paper Co., Drottningholm, Gothenburg, 58 bls.
Gilbert Paper Co., Drottningholm, Gothenburg, 6 rolls.
Whiting & Patterson, Inc., Drottningholm, Gothenburg, 48 rolls.
Universal Paper Co., Drottningholm, Gothenburg, 66 bls.
Universal Paper Co., Drottningholm, Gothenburg, 340 rolls.
Wilkinson Bros. & Co., Inc., Drottningholm, Gothenburg, 12 bls.
Wilkinson Bros. & Co., Inc., Drottningholm, Gothenburg, 40 rolls.
E. H. Sergeant & Co., Drottningholm, Gothenburg, 2 cs.
Davies Turner & Co., Suffren, Havre, 12 cs.
Titan Shipping Co., Suffren, Havre, 17 cs.
Globe Shipping Co., Suffren, Havre, 4 cs.
Standard Products Corp., Suffren, Havre, 120 cs.
P. H. Petry & Co., Rochambeau, Havre, 8 cs.
Cocnca Morrison & Co., Rochambeau, Havre, 7 cs.

RAGS, BAGGINGS, ETC.

Maurice O'Meara Co., Fenchurch, Barcelona, 51 bls. burlaps.
Maurice O'Meara Co., Fenchurch, Barcelona, 71 bls. gunnys.
Castle & Overton, Inc., Fenchurch, Barcelona, 1 ble. rags.
Brown Bros. & Co., Fenchurch, Marseilles, 73 bls. rags.
E. J. Keller Co., Inc., Fenchurch, Marseilles, 35 bls. rags.
American Express Co., Fenchurch, Marseilles, 10 bls. rags.
Mechanics & Metals National Bank, Anfora, Genoa, 60 bls. rags.
A. W. Fenton, Inc., Anfora, Leghorn, 161 bls. rags.
E. J. Keller Co., Inc., Anfora, Naples, 296 bls. rags.
Central National Bank, Anfora, Algiers, 398 bls. rags.
A. W. Fenton, Inc., Tyne Maru, Hamburg, 117 bls. bagging.
S. Birkenstein & Sons, Tyne Maru, Hamburg, 63 bls. rags.
Irving Bank Columbia Trust Co., Sardinian Prince, Buenos Aires, 13 bls. rags.
B. D. Kaplan, Carmania, Liverpool, 116 bls. rags.
The Stone Bros. Co., Inc., Carmania, Liverpool, 100 bls. rags.
S. Green, Fryken, Santiago, 26 bls. rags.
Philadelphia National Bank, Mount Clay, Hamburg, 79 bls. rags.
National City Bank, Mount Clay, Hamburg, 265 bls. rags.

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Imports of Paper and Paper Stock

(*Continued from page 62*)

E. J. Keller Co., Inc., Mount Clay, Hamburg, 56 bls. bagging.

Anglo South American Bank, Minnekahda, London, 185 bls. rags.

The Stone Bros. Co., Inc., Suffren, Havre, 73 bls. rags.

National City Bank, Suffren, Havre, 143 bls.. rags.

Hartig Pulp Co., Innoko, Rotterdam, 40 bls. rags.

The Stone Bros. Co., Inc., Innoko, Rotterdam, 61 bls. rags.

E. J. Keller Co., Inc., Innoko, Rotterdam, 84 bls. rags.

E. J. Keller Co., Inc., Innoko, Mannheim, 82 bls. rags.

E. J. Keller Co., Inc., Lutzow, Bremen, 61 bls. rags.

Brown Bros. & Co., Arabic, Hamburg, 263 bls. rags.

A. W. Fenton, Inc., Arabic, Hamburg, 75 bls. rags.

National City Bank, Arabic, Hamburg, 339 bls. rags.

E. J. Keller Co., Inc., Schodack, Dunkirk, 64 bls. rags.

The Barret Co., Schodack, Dunkirk, 66 bls. cottons.

Atterbury Bros., Inc., Schodack, Havre, 42 bls. rags.

Atterbury & McKelvey, Schodack, Havre, 386 bls. rags.

E. J. Keller Co., Inc., Resolute, Hamburg, 36 bls. bagging.

Philadelphia National Bank, Resolute, Hamburg, 79 bls. rags.

Tradesmans National Bank, Stuttgart, Bremen, 276 bls. paperstock.

Bank of New York, Stuttgart, Bremen, 125 bls. rags.

Mechanics & Metals National Bank, Stuttgart, Bremen, 240 bls. rags.

Mechanics & Metals National Bank, Stuttgart, Bremen, 35 bls. bagging.

Castle & Overton, Inc., Cabo Hatteras, Italy, 143 bls. bagging.

OLD ROPE

W. Schall & Co., Belgenland, Antwerp, 67 coils.

MANILA ROPE

New York Cordage Co., Belgenland, Antwerp, 60 coils.

CASEIN

New York Trust Co., Belgenland, Antwerp, 67 bags.

WOOD PULP

Hartig Pulp Co., Tyne Maru, Hamburg, 1600 bls. wood pulp, 330 tons.

Tidewater Paper Mills Co., Bornholm, Weymouth, N. S., 12,302 bls. wood pulp.

Nilsen Lyon & Co., Idefjord, Trondhjem, 500 bls. mechanical pulp.

Pagel Horton & Co., Inc., Bird City, Ornskoldsvik, 6000 bls. sulphate pulp, 1016.

Johanson Wales & Sparre, Inc., Drottningholm, Gothenburg, 895 bls. dry soda pulp.

E. M. Sergeant & Co., Drottningholm, Gothenburg, 254 bls. sulphite pulp.

E. M. Sergeant & Co., Drottningholm, Gothenburg, 299 bls. dry soda pulp.

Ira L. Beebe & Co., Inc., Lutzow, Bremen, 1775 bls. wood pulp.

Castle & Overton, Inc., Lutzow, Bremen, 415 bls. wood pulp.

Castle & Overton, Inc., Stuttgart, Bremen, 830 bls. wood pulp.

Ira L. Beebe & Co., Inc., Stuttgart, Bremen, 382 bls. wood pulp.

WOOD PULP BOARDS

Lagerloef Trading Co., Mount Clay, Hamburg, 1059 bls., 88 tons.

Lagerloef Trading Co., Kolsnaren, Kotka, 263 bls.

WOOD FLOUR

Composition Materials Co., Drottningholm, Gothenburg, 782 bags.

The Bakelite Corp., Innoko, Rotterdam, 1334 bags, 71,470 kilos.

The Burnet Co., Innoko, Rotterdam, 6 bags.

The Hansa Co., Kolsnaren, Kotka, 2250 bags.

PHILADELPHIA IMPORTS

C. W. Robbins, Fenchurch, Marseilles, 11 cs. writing paper.

Corn Exchange Bank, Tyne Maru, Hamburg, 1 cs. surface coated paper.

O. G. Hempstead & Co., Tyne Maru, Hamburg, 8 bls. packing paper.

Paper House of Penna., Kolanaren, Helsingfors, 373 cs. printing paper.

Paper House of Penna., Kolanaren, Helsingfors, 64 rolls news print.

The Stone Bros. Co., Inc., Fenchurch, Marseilles, 177 bls. rags.

A. W. Fenton, Inc., Fenchurch, Marseilles, 595 bls. rags.

Philadelphia National Bank, Fenchurch, Marseilles, 223 bls. rags.

E. J. Keller Co., Inc., Fenchurch, Barcelona, 297 bls. rags.

The Stone Bros. Co., Inc., Fenchurch, Barcelona, 143 bls rags.

New York Trust Co., Fenchurch, Barcelona, 75 bls. rags.

D. I. Murphy, Fenchurch, Barcelona, 80 bls. rags.

Brown Bros. & Co., Anfora, Genoa, 268 bls. rags.

Anglo South American Trust Co., Anfora, Genoa, 420 bls. rags.

Royal Manufacturing Co., Anfora, Genoa, 31 bls. cotton waste.

Union National Bank, Anfora, Leghorn, 228 bls. rags.

Union National Bank, Anfora, Genoa, 418 coils old rope.

D. I. Murphy, Tyne Maru, Hamburg, 96 bls. paper stock.

Philadelphia National Bank, Tyne Maru, Hamburg, 113 bls. rags.

Philadelphia National Bank, Tyne Maru, Hamburg, 147 bls. bagging.

A. W. Fenton, Inc., Tyne Maru, Hamburg, 281 bls. rags.

Fidelity International Trust Co., Tyne Maru, Hamburg, 147 bls. bagging.

J. B. Moore & Co., London Mariner, London, 178 bls. rags.

New York Trust Co., London Mariner, London, 165 coils old rope.

Philadelphia National Bank, London Mariner, London, 203 bls. rags.

W. H. Atkinson, London Mariner, London, 215 coils old rope.

Mechanic & Metals National Bank, London Mariner, London, 152 bls. rags.

A. H. Searle, London Mariner, London, 281 bls. rags.

Chase National Bank, Blair Palermo, 322 bls. rags.

E. J. Keller Co., Inc., Delaware Copenhagen, 881 bls. rags.

E. J. Keller Co., Inc., Ohioan Kobe, 200 bls. rags.

E. J. Keller Co., Inc., Cabo Hatteras, Genoa, 21 bls. cotton waste.

Castle & Overton, Inc., Hernfels, Germany, 337 bls. rags.

Castle & Overton, Inc., Incemore, Scotland, 5 bls. jute waste.

Castle & Overton, Inc., Quaker City, London, 186 bls. rags.

Castle & Overton, Inc., Legie, Germany, 768 bls. rags.

Castle & Overton, Brenta, Turkey, 705 bls. rags.

Castle & Overton, Inc., West Eldara, Rotterdam, 34 bls. rags.

Castle & Overton, Inc., West Eldara, Antwerp, 338 bls. rags.

Castle & Overton, Inc., ..., Germany, 550 bls. woodpulp.

Large Leaf Trading Co., Kolsnaren, Helsingfors, 615 bls. woodpulp.

Johanson Wales & Sparre, Inc., Bird City, Kramfors, 300 bls. sulphite, 50 tons.

Johanson Wales & Sparre, Inc., Bird City Frano, 1800 bls. kraft pulp, 304.

Johanson Wales & Sparre, Inc., Bird City, Sundsvall, 900 bls. sulphite, 152.

Price & Pierce, Ltd., Bird City, Sundsvall, 1200 bls. sulphite, 203.

Price & Pierce, Ltd., Bird City, Sundsvall, 500 bls. chemical pulp, 101.

Scandinavian Pulp Agency, Inc., Bird City, undsvall, 250 bls. sulphite, 50.

BOSTON IMPORTS

McLauren Jones & Co., Nessian, London, 35 rolls printing paper.

T. D. Downing & Co., Nessian, Manchester, 129 bls. new cuttings.

F. Leyland, Nessian, London, 12 bls. rags.

Brown Bros. & Co., Nessian, London, 232 bls. waste paper.

Baring Bros. & Co., Nessian, London, 150 bls. wastepaper.

Crocker Burbank & Co., Nessian, London, 329 bls. wastepaper.

Furness Withy & Co., Nessian, London, 77 bls. rags.

Castle & Overton, Inc., Devonian, England, 86 bls. rags.

Castle & Overton, Inc., ... Germany, 280 bls. woodpulp.

F. J. Keller Co., Inc., Breedy, Mannheim, 255 bls. woodpulp.

Johanson Wales & Sparre, Inc., Natirar, Frano, 3180 bls. kraft pulp, 538.

Atterbury Bros., Inc., Sardinian Prince B. Aires, 250 bags casein, 15,000 k's.

NEW ORLEANS IMPORTS

E. J. Keller Co., Inc., West Norranius, Rotterdam, 442 bls. bagging.

E. J. Keller Co., Inc., West Tacook, Hamburg, 238 bls baggings.

E. J. Keller Co., Inc., West Tacook, Hamburg, 238 bls. bagging.

Castle & Overton, Inc., Effna, Germany, 493 bls. rags.

Castle & Overton, Carplaka, France, 493 bls. rags.

BALTIMORE IMPORTS

Hoole Service Co., Scholack, Havre, 30 cs. writing paper.

Mechanics & Metals National Bank, Carenco, Marseilles, 128 bls. rags.

L. H. Abenheimer, Schodack, Havre, 180 bls. rags.

Chase National Bank, Schodack, Havre, 266 bls. rags.

Castle & Overton, Inc., Cubano, Norway, 500 bls. woodpulp.

Castle & Overton, Inc., ... Germany, 685 bls. woodpulp.

Castle & Overton, Inc., West Haven, Rotterdam, 788 bls. woodpulp.

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New York Market Review

Office of THE PAPER TRADE JOURNAL,
Wednesday, September 23, 1925.

Trading in the paper market continues to improve and the demand for the various grades is quite satisfactory. A steady volume of inquiries is being received and prices generally are holding very firm. The consistent and successful efforts of the sales organizations of the leading paper houses are bearing fruit and with good fall business practically assured, the possibilities of an expansion of trade in the forthcoming year are already beginning to be discussed.

The consumption of news print continues to increase. Due to the exceptionally heavy demand experienced during the summer months, stocks are said to be rather low, and prices may advance slightly in the near future. The latest scheme of newspapers to increase circulation by offering prizes for $1 or $2 bills bearing certain numbers has been declared unlawful by Solicitor Donnelly, of the Post Office Department. He ruled that the practice was a violation of the postal lottery laws and barred publications offering such prizes from the mails.

The box board market is expanding slowly and dealers are experiencing a fairly good demand. A gratifying amount of business is being transacted in fine papers, mostly consisting of innumerable small orders from the printers. The demand for coarse papers also continues to expand and the market is in a very sound condition.

Mechanical Pulp

The ground wood market shows unmistakable signs of picking up and considerable optimism prevails, mostly due to the increased demand experienced. Mechanical pulp is still moving freely into the consuming channels. While most of the purchasing continues to be on the contract basis, spot buying is quiet although there are some signs of improvement. Prices are generally firm and the future outlook for the market is bright.

Chemical Pulp

The chemical pulp market is experiencing a greatly increased demand and, as a result, prices are beginning to advance. Kraft and bleached sulphate are particularly strong features of the market. Consumers are said to be purchasing at a considerable period ahead, in anticipation of a further rise. While stocks are ample at present, the number of inquiries in the market leads many observers to express the opinion that the accumulations will soon be absorbed.

Old Rope and Bagging

While the old rope and bagging business is rather quiet at present, inquiries are more prevalent than for some time, and the demand shows some signs of improvement. Prices are little changed from the recently quoted basis.

Rags

Although prices are inclined to fluctuate slightly, the rag market shows little signs of any great change at present. Domestic rags are attracting slightly more attention, however, and buying may soon become more active. The foreign rag market continues dull. Dealers on the other side are asking somewhat higher prices for export, due to the scarcity of rags on account of the heavier home consumption by the European mills.

Waste Paper

The mill demand for waste paper remains fairly satisfactory, and packers and dealers apparently have enough orders on hand to permit them to maintain prices on a firm basis. When the requirements of the mills broaden, as it is expected to do in the near future, the trade is disposed to anticipate higher prices.

Twine

The revival of activity in the twine market is continuing and the demand for supplies is better than for some considerable time. Prices are well maintained and dealers are generally confident of brighter prospects for the business in the ensuing months until, at least, the close of the current year.

Brotherhood to Meet Carlysle Group

ALBANY, N. Y., September 21, 1925.—An important meeting is scheduled to take place in Governeur next week when representatives from the International Brotherhood of Papermakers, the Pulp and Sulphite Workers' Union and the International organizations of machinists, firemen and electrical workers will meet with representatives of the five local unions in towns where the Carlysle group of mills are located. It will be the second of a series of meetings which are to be held every three months.

The meeting in Governeur is said to be rather unusual. Each of the Carlysle mills has its own manager and as managers frequently get together in the interests of the company for which they work, it has been decided, that the local unions in these five places shall have a closer knowledge of what the others are doing and for that reason they will meet once every three months and discuss conditions as they prevail in the various mills of the Carlysle group. It is believed that this will serve to unify matters to a considerable extent. A somewhat similar arrangement is working out successfully in the Spanish River section in Canada and is known there as the Mutual Interests Board.

Superintendents Meet in Madison

APPLETON, Wis., September 18, 1925.—The regular fall meeting of the Northwestern Division of the Pulp and Paper Mill Superintendents Association is being held today and tomorrow at the Lorraine hotel in Madison, Wis. The meeting is being held in Madison partly because of the superintendents' interest in the pulp and paper research work in the State Forest Products Laboratory, which they were to visit today.

A dinner in the evening, followed by a business meeting with an address by R. N. Miller of the Forest Products Laboratory, on the subject, "The Relation Between Cooking Conditions and Yield and Quality of Sulphite Pulp," was scheduled.

Saturday the Beloit Iron Works, manufacturing considerable quantities of paper mill machinery, and the Beloit Box Board factory, at Beloit, Wis., were scheduled for visits by the superintendents.

A final business meeting will be held in Madison on Saturday evening. About 50 men were expected to attend the Madison sessions.

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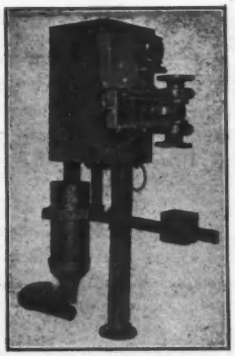

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Miscellaneous Markets

Office of THE PAPER TRADE JOURNAL,
Wednesday, September 23, 1925.

The steady improvement experienced in the chemical market since the beginning of September is still in evidence and appears likely to continue for an indefinite period of time. A good volume of business was transacted during the past week in practically all sections of the trade and prices remain generally firm. Contract withdrawals are being well maintained while deliveries are increasing in a satisfactory manner. The manufacturers are not yet ready to announce their contract prices for the forthcoming year but the revised scale should be ready for publication some time in October. Prominent members of the chemical industry express the opinion that only slight modifications will be made in the revised scale of prices, although slight advances may be made on some commodities.

BLANC FIXE.—A persistent demand is being experienced for blanc fixe and manufacturers are booking a good volume of new orders. Many buyers are being forced to replenish their supplies, due to the fact that their reserve stocks are very low. Prices, however, are generally firm, and are shaded only in rare instances where there is some particular reason for doing so. The pulp is quoted at from $60 to $70 a ton and the powder from $75 to $90 a ton.

BLEACHING POWDER.—The market for bleaching powder is quite active and the situation is better than for some time past. Manufacturers report a generous number of inquiries and are very optimistic regarding future prospects. Prices are well maintained and rule from $1.90 to $2.30 per 100 pounds, in large drums, at works.

CAUSTIC SODA.—A steady increase in the demands of consumers of caustic soda has been noticed during the past week. Stock is reported to be moving into consumption at a good rate. Contract business is excellent and spot buying is gradually becoming a little more lively. The price is still quoted at from 3.10 to 3.15 cents a pound.

CASEIN.—The demand for casein continues to improve and it is gradually resuming the advantageous position from which the hot weather dislodged it. Although the price is being shaded on occasions, it is still holding fairly well to the quotation of 13 cents a pound.

CHINA CLAY.—China clay demand has greatly improved and is quite normal for this time of the year. There is no great variation in prices and the general opinion appears to be that there is little likelihood of any radical change for some considerable time. The imported grades are still quoted at from $16 to $20 a ton, while the domestic grades are bringing from $12 to $15 a ton.

CHLORINE.—The demand for chlorine continues steady and persistent. Contract withdrawals have been exceptionally good and the future outlook is very bright. Prices are well maintained at from 4 to 4½ cents per pound, in tanks, at works.

ROSIN.—The consumption of rosin is holding up very well and the tone of the market is generally strong. Favorable conditions are expected to prevail for the balance of the year. Much competition is developing for supplies and as a result prices in all grades are advancing. The naval stores centers are now quoting it at from $13.60 to $13.80 in barrels of 280 pounds.

SALT CAKE.—There is a great improvement in the inquiries for salt cake. Competition is keen and prices are stiffening. Manufacturers view the situation with confidence and are optimistic regarding the prospects of the new contract season. The quoted price for salt cake is from $20 to $22 a ton, in bulk, at works.

SODA ASH.—Soda ash is moving into consumption at a heavy rate and contract withdrawals are exceptionally good for this time of the year. Production has been heavy to supply consumers demands and no surplus stocks have accumulated. The quoted price is from 1.35 to 1.38 cents a pound in bulk at works.

SULPHATE OF ALUMINA.—A fair amount of contract business is being transacted in sulphate of alumina and spot buying is also showing signs of revival. The demand is increasing steadily and the market is stronger than for some time past. Commercial grades are quoted at from 1.40 to 1.50 cents a pound at the Eastern Works, while the iron free is selling at from 2 to 2.35 cents a pound.

SULPHUR.—The sulphur market is quite firm in tone and contract quotas are being taken out in a satisfactory manner. The demand is well maintained and inquiries are growing steadily. The price is still quoted at from $19 to $20 a ton in bulk, ship side, and $15 to $16 a ton, at mine.

TALC.—The demand for talc is normal for this time of the year and very little change in the situation is anticipated in the immediate future. The quoted price continues at from $17 to $18 a ton.

National Fall Conference Arrangements

The National Paper Trade Association of the United States will hold its annual Fall convention at the Drake, Chicago, on October 5, 6, 7 and 8. Secretary Wm. C. Ridgway, of 41 Park Row, New York, sends out the call, as follows:

"The Annual Fall Business Conference of the National Paper Trade Association will be held at the Drake, Chicago, on Monday, Tuesday, Wednesday and Thursday, October 5, 6, 7 and 8, 1925. Monday and Tuesday will be devoted to meetings of committees and of the Board of Directors.

"Meetings of the Wrapping Paper Division will be held in the forenoon of both Wednesday and Thursday, and the Fine Paper Division will meet in the afternoon of the same days. It is probable that a general conference, under the auspices of the Department of Commerce, of all interested in tissue paper will be held Thursday afternoon to consider the matter of the simplification of sizes of tissue. No joint meeting of the Fine and the Wrapping Paper Divisions is contemplated, as there is no business requiring action of the Association.

"Matters of the utmost importance will come before both Divisional Meetings, and the importance of a large and representative attendance can not be over emphasized. In the past, the Chicago meetings have not been well attended by the Eastern members, but this year they are urged to attend. Action will be taken on a number of questions which are of vital importance to both Divisions, and unless the attendance is representative of the East as well as the West but little progress can be made. The program will be announced as soon as possible, but every member should at once make his plans to go."

Production of Paper Mills in Japan

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 23, 1925.—The production of paper mills in Japan who are members of the Japan Paper Association during June amounted to 79,898,406 pounds and sales to 70,373,075 pounds, bringing the total for the first six months of the current year up to 454,120,362 pounds for the former and 446,238,123 pounds for the latter, as compared with 395,080,637 and 405,365,250 pounds respectively during the same period last year, according to a report received by the Paper Division of the Department of Commerce.

The mills of the association report during June a consumption of 2,895,933 cubic feet of wood, 2,746,769 pounds of rags, 350,165 pounds of straw and 2,305,247 pounds of waste paper in addition to 19,591 tons of chemical pulp and 19,455 tons of mechanical pulp.

Albemarle Paper Co.'s Boston Office

BOSTON, Mass., September 21, 1925.—In order better to serve its New England customers, the Albemarle Paper Company will have a complete line of samples at its office here at 159 Devonshire street, telephone Main 7241. C. L. Dodge will answer any inquiries.

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REPORTS AND VALUATIONS DESIGN AND CONSTRUCTION
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"An Engineering Service Based Upon Actual Operating Experience"

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Consulting Engineer
Paper & Pulp Mills
Power Plants
Industrial Reports
Appraisals
Room 1237, Northwest Bank Bldg.
PORTLAND, OREGON

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For Paper Mills and Filtering Purposes
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No Wood, Splinters or Dust—Drains Quickly and Clean
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GENERAL CHEMICAL COMPANY 40 RECTOR STREET, NEW YORK

COMBUSTION ENGINEERING CORPORATION
PULVERIZED FUEL
45 BROAD STREET, NEW YORK

Market Quotations

Quoted by Hepburn & Co., No. 74 Broadway, N. Y. City, to whom all inquiry for quotations on these or any other Securities is referred.

BONDS	BID	OFFERED
Abitibi Power and Paper, Gen. 6s 1940	101	103*
Advance Bag and Paper, 7s 1943	98	100*
Bastrop Pulp and Paper, 7½s 1932	104	108*
Brompton Pulp and Paper, 6s 1927	94	96
Beaver Board, 8s 1933	92	94
Bedford Pulp and Paper, 6½s 1942	98	...
Berkshire Hills Paper Co., 8s 1941	...	80
Beaver Board, N. Y. Curb, 8s 1933	93	95
Beaver Products Corp., 7½s 1942	104	106
Belgo Canadian Paper, 6s 1943	100	101
Brown Paper Co., 8s 1931	102	...
Berlin Mills, 5s 1931	98	...
Bryant Paper Co., 6s 1942	99	102*
Brown Company Serial, 6s 1925-43	97	100
Central Paper 6½s 1925-42	91	94
Cape Breton Pulp and Paper, 6s 1932	100	...
Carthage Sulphite Pulp and Paper, 8s 1941	40	50
Champion Coated Paper Co., 6s 1924-34	...	102
Champion Fibre Co. Notes, 8s 1930	101	...
Cherry River Paper, 5s 1929	98	100*
Donnaconna Paper Co., Ltd., 6s 1940	99	101
Eddy Paper, 7½s 1931	97	...
Eagle Paper, 6½s 1932	96	100
Escanaba Paper, 6s 1933	87	95*
Fox River Paper, 7s 1931	100	...
Fort Orange Paper Co., 7s 1942	95	99
Eddy Paper Co., 7½s 1931	95	...
Gilbert Paper Co., 7s 1927	96	...
Gilbert Paper Co., 6½s 1923-29	101	102*
Hammermill Paper Co., 6s 1930-39	99	...
Hercules Corp'n, 8s 1936	100	...
Hummell, Ross Fibre Corp., 7s 1925	90	...
Jessup & Moore Paper Co., 6s 1939	90	97
Kenmore Pulp and Paper Co., 6s 1937	90	...
Lake Superior Pulp and Paper, 6s 1941	105	...
Mattagami Pulp and Paper, 6s 1937	90	...
Marinette & Menominee, 7½s 1936	104	...
National Paper and Type, 6s 1947	96	99*
Oswego Falls Corp., 8s 1942	102	105
Orono Pulp and Paper, 5s 1941	93	96*
Orono Pulp and Paper, 6s 1943	97	100*
Oxford Paper Co., 6s 1947	101	...
Paterson Parchment Paper, 5½s 1927-28	98	100
Paterson Parchment, 6s 1938	98	100
Parker Young Co., 6½s 1944	92	96
Price Bros. & Co. Ltd., 6s 1943	100	102
Provincial Paper Mills, Ltd., 6s 1940	97	...
Riordon Co., Ser'es A. 8s 1940	115	118
Riordan Paper, 6s 1924	99	101
Riordan Pulp and Paper, Ltd., 6s, 1929	33	35
River Raisin Paper, 8s 1936	104	106
St. Maurice Paper Co., Ltd., 5½s, 1929	98½	99¾
St. Regis Paper, 6½s, 1929-35	97	102
Smith (Howard) Paper Mills, 7s 1941	98	100
Smith (Howard) Paper Mills, 6s 1934	98	...
St. Croix Paper, 5s 1923-37	95	...
Stevens & Thomson Paper, 6s 1942	88	92
Spanish River Pulp and Paper, 6s 1931	105	108
Spanish River Pulp and Paper, Gen 8s 1941	106	109
Ticonderoga Pulp and Paper Co., 6s, 1940	91	95
Ticonderoga Pulp & Paper 1-5, 1930	88	93
S. D. Warren Company, 6s, 1945	97	100
Whittaker Paper, 1st 7s 1942	96	98
Watab Paper Co., 6½s 1942	100	104
Waterway Paper Products, 7s 1924-27	95	100
Wayagamack Pulp and Paper, Ltd., 6s 1951	87	90

STOCKS	BID	ASKED
Abitibi Power and Paper, Com	65	68
Abitibi Power and Paper, Pfd	104	...
Advance Bag and Paper, Com	8	12*
Advance Bag and Paper, Pfd	77	...
Beaver Board, Com	4	6
Beaver Board, Pfd	32	35
Bryant Paper, Cap	12	...
Bryant Paper, Pfd	9	...
Chicago Mill & Lumber Co., Com	63	...
Chicago Mill & Lumber Co., Pfd	98	104
Crown Williamette, Com	93	98*
Crown Williamette, 7% A, Pfd	98	SW
Donnaconna Paper, Com	42	48
Donnaconna Paper, Pfd	93	98*
Great Northern Paper, Cap	260	270
Jessup & Moore Paper, Pfd	75	80
International Paper Co., Com	69	71
International Paper Co., Pfd. 6%	75	80
Mengel Company, Com	67	70
Mengel Company, Pfd	83	93
Oxford Papers, Com	93	97
Oxford Paper Co., Pfd	98	...
Provincial Paper Co., Com	94	98
Provincial Paper Co., Pfd	99	...
Price Brothers, Cap	39	40
St. Croix Paper	185	215
St. Maurice Paper Co., Cap	82	85
St. Regis Paper Co., Cap	54	56
Spanish River Pulp and Paper, Com	99	101
Spanish River Pulp and Paper, Pfd	112	...
Ticonderoga Pulp and Paper, Cap	145	...
West Virginia Pulp and Paper, Cap	44	47
West Virginia Pulp and Paper, Pfd	95	130
Whittaker Paper, Com	25	35
Whittaker Paper, Pfd	60	70

* Nominal.

Paper

(F. o. b. Mill)

Ledgers	11.00	@38.00
Bonds	9.00	@45.00
Writings—		
Extra Superfine	14.00	@32.00
Superfine	14.00	@32.00
Tub Sized	10.00	@15.00
Engine Sized	8.00	@11.00
News—		
Rolls, contract	3.50	@ 3.90
Rolls, transit	3.75	@ 4.25
Sheets	4.00	@ 4.25
Side Runs	3.25	@ 4.00
Book, Cased—		
S. & S. C.	7.00	@ 9.75
M. F.	6.25	@ 8.75
Coated and Enamel	8.00	@15.00
Lithograph	8.00	@15.00
Tissues—Per Ream		
White No. 1	.70	@ .90
Anti-Tarnish	1.10	@ 1.90
Colored	1.00	@ 2.00
White No. 2	.65	@ .75
Kraft	.85	@ .95
Manila	.70	@ .80
Kraft—		
No. 1 Domestic	5.75	@ 6.25
No. 2 Domestic	5.10	@ 5.50
Imported	5.50	@ 5.75
Manila—		
No. 1 Jute	9.00	@ 9.25
No. 2 Jute	7.75	@ 8.50
No. 1 Wood	4.75	@ 5.25
No. 2 Wood	4.00	@ 4.50
Butchers	3.75	@ 4.25
Fibre Papers—		
No. 1 Fibre	4.50	@ 5.00
No. 2 Fibre	4.25	@ 4.75
Common Bogus	2.50	@ 2.75
S. Screening	3.00	@ 3.50
Card Middles	4.00	@ 5.00
Boards—per ton—		
News	45.00	@47.50
Straw	57.00	@60.00
Chip	42.00	@45.00
Binders' Boards	72.50	@77.50
Sgl. Mla. Ll. Chip	58.00	@60.00
Wood Pulp	70.00	@75.00
Container	62.50	@67.50
Sulphate Screenings—		
Coarse	.75	@ .85
Refined	1.75	@ 2.00
Ground Wood—		
Screenings	20.00	@25.00
Glassine—		
Bleached, basis 25 lbs.	13.00	@16.00
Bleached, basis 20 lbs.	15.00	@16.00

Mechanical Pulp

(Ex-Dock)

No. 1 Imported	33.00	@37.00

(F. o. b. Mill)

No. 1 Domestic	28.00	@32.00

Chemical Pulp

(Ex-Dock, Atlantic Ports)

Sulphite (Imported)—		
Bleached	4.00	@ 4.50
Easy Bleaching	3.10	@ 3.40
No. 1 strong unbleached	2.90	@ 3.25
No. 2 strong unbleached	2.55	@ 2.85
No. 1 Kraft	2.95	@ 3.20
Sulphate—		
Bleached	3.75	@ 4.00

(F. o. b. Pulp Mill)

Sulphite (Domestic)—		
Bleached	3.85	@ 4.50
Easy Bleaching Sulphite	3.00	@ 3.25
News Sulphite	2.55	@ 2.80
Mitscherlich	3.25	@ 3.75
Kraft (Domestic)	2.75	@ 3.50
Soda Bleached	4.00	@ 4.25

Domestic Rags

New Rags

Prices to Mill f. o. b. N. Y.

Shirt Cuttings—		
New White, No. 1	14.25	@15.00
New White, No. 2	8.00	@10.00
Silesias No. 1	10.50	@11.50
New Unbleached	14.00	@15.00
Washables	6.50	@ 9.25
Fancy	9.75	@10.25
Blue Overall	11.50	@11.75
New Blue Prints	7.50	@ 8.50
New Soft Blacks	5.75	@ 6.20
Mixed Khaki Cuttings	7.00	@ 8.00
Pink Corset Cuttings	10.25	@10.75
Pink Muslin	10.00	@10.50
New Light Seconds	3.25	@ 3.50
O. D. Khaki Cuttings	7.00	@ 8.00
Men's Corduroy	6.25	@ 6.75
New Mixed Blacks	4.00	@ 4.50

Old Rags

White, No. 1—		
Repacked	6.50	@ 7.50
Miscellaneous	6.50	@ 7.00
White, No. 2—		
Repacked	4.00	@ 4.25
Miscellaneous	3.50	@ 3.75
St. Soiled, White	2.90	@ 3.00
Thirds and Blues—		
Repacked	3.75	@ 4.00
Miscellaneous	3.00	@ 3.25
Black Stockings	3.75	@ 4.25
Roofing Rags—		
Cloth Str.ppings	2.35	@ 2.45
No. 1	2.35	@ 2.45
No. 2	2.40	@ 2.50
No. 3	2.10	@ 2.20
No. 4	2.00	@ 2.10
No. 5A	1.50	@ 1.75

Foreign Rags

New Light Silesias	9.00	@10.00
Light Flannelettes	10.00	@11.00
Unbleached Cottons	13.50	@14.50
New White Cuttings	13.00	@14.00
New Light Oxfords	10.00	@11.00
New Light Prints	9.00	@10.00
New Mixed Cuttings	4.25	@ 4.50
New Dark Cuttings	3.75	@ 4.25
No. 1 White Linens	10.00	@11.00
No. 2 White Linens	7.25	@ 8.25
No. 3 White Linens	6.25	@ 6.75
No. 4 White Linens	4.50	@ 5.50
Old Extra Light Prints	4.25	@ 4.75
Ord. Light Prints	3.25	@ 3.75
Med. Light Prints	2.50	@ 3.00
Dutch Blue Cottons	3.25	@ 3.75
Ger. Blue Cottons	2.85	@ 3.12
Ger. Blue Linens	4.25	@ 4.75
Checks and Blues	3.25	@ 3.50
Linsay Garments	2.50	@ 2.60
Dark Cottons	2.35	@ 2.45
Shoppery	2.25	@ 2.35
French Blues	4.00	@ 4.50

Bagging

Prices to Mill F. o. b. N. Y.

Gunny No. 1—		
Foreign	3.15	@ 3.25
Domestic	3.15	@ 3.25
Wool Tares, light	2.65	@ 2.75
Wool, Tares, heavy	2.70	@ 2.80
Bright, Bagging	2.55	@ 2.65
Mixed Bagging	2.30	@ 2.40
Sound Bagging	2.10	@ 2.20
Roofing Bagging	1.85	@ 1.95
Manila Rope—		
Foreign	5.65	@ 6.00
Domestic	6.50	@ 7.00
New Bu. Cut	3.60	@ 3.85
Hessian Jute Threads—		
Foreign	4.00	@ 4.25
Domestic	3.25	@ 3.50

Old Waste Papers

(F. o. b. New York)

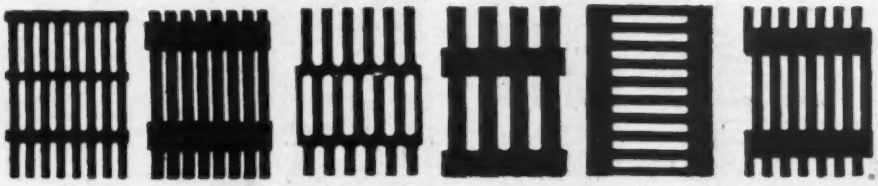
Shavings—		
Hard, White, No. 1	3.50	@ 3.70
Hard, White, No. 2	3.25	@ 3.50
Soft, White, No. 1	2.80	@ 2.90
Flat Stock—		
Stitchless	1.45	@ 1.55
Overissue Mag	1.25	@ 1.40
Solid Flat Book	1.25	@ 1.40
Crumpled No. 1	1.25	@ 1.35
Solid Book Ledger	1.70	@ 1.80
Ledger Stock	1.40	@ 1.50
New B. B. Chips	.65	@ .75
Manilas—		
New Env. Cut	2.25	@ 2.40
New Cut. No. 1.	1.85	@ 2.25
Extra No. 1 old	1.40	@ 1.50
Print	1.20	@ 1.30
Container Board	.70	@ .90
Bogus Wrapper	1.00	@ 1.10
Old Krafts Machine compressed bales	2.00	@ 2.10
News—		
No. 1 White News	1.85	@ 2.00
Strictly Overissue	1.05	@ 1.15
Strictly Folded	.75	@ .85
No. 1 Mixed Paper	.65	@ .70
Common Paper	.50	@ .55

Twines

Cotton—(F. o. b. Mill)—		
No. 1	.42	@ .45
No. 2	.41	@ .43
No. 3	.40	@ .42
India, No. 6 basis—		
Light	.19	@ .20
Dark	.17	@ .19
B. C., 18 basis	.39	@ .41
A. B. Italian, 18 Basis	.56	@ .61

PERFORATED METALS

All sizes and shapes of Holes



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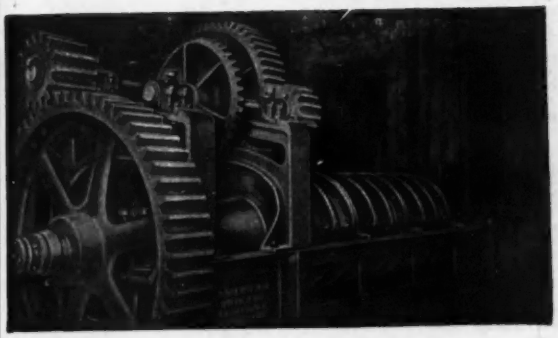

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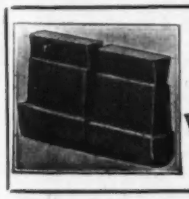

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WILL STAND THE STRAIN
THEY WEAR LONGER

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Machines for Processing Paper
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JOHN WALDRON CORPORATION

NEW BRUNSWICK, N. J.

CHICAGO NEW YORK BOSTON

Penn Paper and Stock Company

PACKERS OF ALL GRADES OF

WASTE PAPER

240 N. FRONT STREET PHILADELPHIA

Unfinished Jute—			
Dark, 18 basis	.30	@	.31
Light, 18 basis	.28	@	.30
Jute Wrapping, 3-6 Ply—			
No. 1	.21	@	.23
No. 2	.21	@	.23
Tube Rope—			
4-ply and larger	.15½	@	.17½
Fine Tube Yarn—			
4-ply and larger	.20	@	.28
4-ply	.21	@	.24
3-ply	.22	@	.25
Unfinished India—			
Basis	.14½	@	.15½
Paper Makers' Twine			
Balls	.12	@	.13
Box Twine, 2-3 ply	.14	@	.15
Jute Rope	.20	@	.40
Ameri. Hemp, 6	.30	@	.32
Sisal Hay Rope—			
No. 1 Basis	.14	@	.16
No. 2 Basis	.10	@	.12
Sisal Lath Yarn—			
No. 1	.14	@	.15
No. 2	.11	@	.13
Manila Rope	.18	@	.19

CHICAGO

Paper

F. o. b. Mill

All Rag Bond	35	@	40
No. 1 Rag Bond	25	@	35
No. 2 Rag Bond	14	@	25
Water Marked Sulphite	9	@	12
Sulphite Bond	7	@	10¾
Sulphite Ledger	9	@	12
Superfine Writing	18	@	24
No. 1 Fine Writing	14	@	18
No. 2 Fine Writing	12	@	14
No. 3 Fine Writing	9	@	12
No. 1 M. F. Book	5½	@	7½
No. 1 S. & S. C. Book	6	@	7¾
Coated Book	7½	@	10
Coated Label	7½	@	10
News—Roll, mill	3½	@	4¼
News—Sheets, mill	3¾	@	4¾
No. 1 Manila	4½	@	5½
No. 1 Fibre	4½	@	5
No. 2 Manila	4	@	4½
Butchers' Manila	3¾	@	4¼
No. 1 Kraft	6	@	6½
No. 2 Kraft (Southern Grade)	4	@	4½
No. 2 Kraft (Northern Grade)	5	@	5¼
Wood Tag Boards	4¼	@	6¼
Sulphite Screenings	3	@	3¼
Manila Tissue, 24x36 sheet	7¼	@	7¾
White Tissue, 20x30 sheet	7¼	@	7½

Boards, per ton—
(Delivered Central Territory)

Plain Chip	45.00	@	47.50
Solid News	47.50	@	50.00
Manila Line Chip	57.50	@	60.00

Container Lined—
(Delivered Central Territory)

85 Test	—	@	75.00
100 Test	—	@	80.00

Old Papers

F. o. b. Chicago

Shavings—			
No. 1 Hard White	3.25	@	3.50
White Envel. Cuttings	3.15	@	3.25
No. 1 Soft Shav.	2.90	@	3.10
No. 1 Mixed	1.45	@	1.50
No. 2 Mixed	1.15	@	1.20
Ledger and Writings	1.55	@	1.60
Solid Books	1.45	@	1.50
No. 1 Light Books	1.00	@	1.05
Blanks	2.00	@	2.10
Kraft	2.25	@	2.35
New Kraft Cuts.	2.50	@	2.60
Manila Envelope Cuttings	2.50	@	2.60
Ex. No. 1 Manila	2.25	@	2.35
Print Manila	1.05	@	1.10
Folded News (oversize)	.90	@	.95
Old Newspapers—			
No. 1	.80	@	.85
No. 2	.65	@	.70
Mixed Papers—			
No. 1	.75	@	.80
No. 2	.55	@	.60
Straw Clippings	.75	@	.80
Binders' Clippings	.75	@	.80
Roofing Stocks, f. o. b. Chicago, Net Cash—			
No. 1	47.00	@	52.00
No. 2	45.00	@	50.00
No. 3	43.00	@	48.00
No. 4	41.00	@	46.00

BOSTON

Paper

Ledgers—			
Sulphite	.08½	@	.18
Rag content	.18	@	.36½
All Rag	.38	@	.50
Bonds—			
Sulphite	.07½	@	.10½
Rag Content	.17	@	.45
All Rag	.36½	@	.51
Writings	.08	@	.20
Superfines	.22	@	.50
News	.04	@	.04½
Book, Super	.08	@	.10
Book, Coated	.09	@	.14
Coated Litho	.09½	@	.15
Label	.09½	@	.15
Jute Manila No. 1	.11	@	.12
Manila, Sul. No. 1	.05	@	.05
Manila, Sul. No. 2	.03¾	@	.04¼
No. 1 Kraft	.05¾	@	.06½
No. 2 Kraft	.05¼	@	.05½
Common Bogus	.02½	@	.02¾
Straw Board	—	@	50.00
News Board	—	@	50.00
Chip Board	—	@	47.50
Single Manila Pulp lined board	57.50	@	60.00
Single White, patent coated board	75.00	@	82.50
Wood Pulp Board	80.00	@	85.00
Binder Boards	75.00	@	85.00
Tarred Felts—			
Regular	61.00	@	63.00
Slaters	66.00	@	68.00
Best Tarred, 1 Ply, roll	1.50	@	1.60
Best Tarred, 2 Ply, roll	1.70	@	1.80
Best Tarred, 3 Ply, roll	2.00	@	2.10

Old Papers

Shavings—			
No. 1 Hard White	4.00	@	3.75
White Blank News	1.75	@	2.00
Manila Env. Cuttings	2.80	@	3.00
No. 2 Hard White	3.25	@	3.50
No. 1 Soft White	.02¼	@	.03
No. 2 Soft White	.02½	@	.03
No. 1 Mixed	1.60	@	1.75
No. 2 Mixed	1.25	@	1.50
Solid Ledger Stock	2.00	@	1.75
No. 1 Books, Heavy	1.25	@	—
No. 1 Books, Light	—	@	1.25
No. 1 New Manila	2.50	@	2.60
No. 1 Old Manila	1.75	@	2.00
Print Manila	1.05	@	1.20
Old Kraft	2.25	@	—
Overissue News	1.00	@	—
Old Newspapers	.70	@	—
No. 1 Mixed Paper	.60	@	.47½
Box Board, Chip	.60	@	.50

Bagging

Price f. o. b. Boston

Gunny, No. 1—			
Foreign	—	@	3.00
Domestic	—	@	3.00
Manila Rope	6.00	@	6.50
Mixed Rope	2.00	@	—
Scrap burlaps	—	@	2.37½
Wool Tares, heavy	2.50	@	2.75
Mixed Strings	—	@	1.90
New Burlap Cuttings	—	@	3.75

Domestic Rags (New)

Price f. o. b. Boston

Shirt Cuttings—			
New White No. 1	.15½	@	.15
Silesias, No. 1	.11	@	—
New Unbleached	.14¼	@	.15
Washable	.07¾	@	.08
Fancy	.10½	@	—
Cottons—According to Grades—Blue—			
Blue overalls	12½	@	—
New Black, soft	.07	@	—
Khaki Cuttings	.07	@	—
Corduroy	.04	@	.05
New Canvas	.12	@	.12½

Domestic Rags (Old)

Price f. o. b. Boston

White No. 1	10.00	@	—
Repacked	9.50	@	—
Miscellaneous	8.50	@	—
White No. 2—			
Repacked	6.50	@	—
Miscellaneous	5.25	@	—
Thirds and Blues—			
Repacked	5.00	@	—
Miscellaneous	3.50	@	—
Roofing Stock—			
No. 1	2.75	@	—
No. 2	2.50	@	—
No. 3	1.90	@	—
No. 4	2.00	@	—

PHILADELPHIA

Paper

Bonds	.07	@	.40
Ledgers	.11	@	.40
Writings—			
Superfine	.13	@	.18
Extra fine	—	@	.22
Fine	.20	@	.26½
Fine, No. 2	.16	@	.25
Fine, No. 3	.12	@	.20
Book, M. F.	.06¾	@	.07
Book, S. S. & C.	.06	@	.07½
Book, Coated	.11	@	.16
Coated Lithograph.	.09	@	.12
Label	.09	@	.12
News	.03¾	@	.04
No. 1 Jute Manila	.09½	@	—
Manila Sul., No. 1	.04½	@	.06
Manila No. 2	.04	@	.04½
No. 2 Kraft	.05¼	@	.05¾
No. 1 Kraft	.06¼	@	.06½
Common Bogus	.02¾	@	—
Straw Board	56.00	@	55.00
News board	47.50		
Chip Board	50.00		
Wood Pulp Board, (Carload Lots)	4.50	@	5.00
Binder Boards—			
Per ton	75.00	@	80.00
Carload lots	65.00	@	70.00
Tarred Felts—			
Regular	66.00	@	68.00
Slaters	70.00	@	72.00
Best Tarred, 1-ply (per roll)	1.85	@	1.95
Best Tarred, 2-ply (per roll)	1.55	@	1.70
Best Tarred, 3-ply	2.10	@	2.15

Bagging

F. o. b. Phila.

Gunny, No. 1—			
Foreign	3.00	@	3.25
Domestic	3.00	@	3.25
Manila Rope	4.75	@	6.00
Sisal Rope	2.50	@	—
Mixed Rope	1.00	@	1.25
Scrap Burlaps	2.25	@	2.50
Wool Tares, heavy	2.00	@	2.13
Mixed Strings	1.25	@	—
No. 1, New Lt. Burlap	3.50	@	3.75
New Burlap Cuttings	3.25	@	3.50

Old Papers

F. o. b. Phila.

Shavings—			
No. 1 Hard White	3.50	@	3.60
No. 2 Hard White	3.00	@	3.25
No. 1 Soft White	2.60	@	2.70
No. 2 Soft White	2.00	@	2.20
No. 1 Mixed	1.50	@	1.60
No. 2 Mixed	1.00	@	1.10
Solid Ledger Stock	1.75	@	1.90
Writing Paper	1.60	@	1.80
No. 1 Books, heavy	1.30	@	1.40
No. 2 Books, light	1.20	@	1.25
No. 1 New Manila	1.80	@	2.00
No. 1 Old Manila	1.60	@	1.75
Print Manila	1.25	@	1.35
Container Manila	1.00	@	1.10
Old Kraft	2.00	@	2.10
Over issue News	1.00	@	1.10
Old Newspaper	.70	@	.75
No. 1 Mixed Paper	.65	@	.70
Common Paper	.50	@	.60
Straw Board, Chip	.60	@	.65
Binders Bd., Chip	.60	@	.65

Domestic Rags—New

Price to Mill, f. o. b. Phila.

Shirt Cuttings—			
New White, No. 1	.13½	@	.14
New White, No. 2	.06	@	.08
Silesias, No. 1	.10½	@	.11
New Unbleached	.14	@	.14½
Washable	.07¼	@	.07¾
Fancy	.09½	@	.10
Cottons—according to grades—			
Blue Overall	.11	@	.11½
New Blue	.04	@	.04¼
New Black Soft	.06	@	.06¼
New Light Seconds	.03½	@	.03¾
Khaki Cuttings	.06½	@	.07
Corduroy	.04	@	.04½
New Canvas	.08¾	@	.09
New Black Mixed	.05	@	.05½

Old

White, No. 1—			
Repacked	6.75	@	7.00
Miscellaneous	6.25	@	6.50
White, No. 2—			
Repacked	.05	@	.05¼
Miscellaneous	.04¾	@	.05
Thirds and Blues—			
Repacked	3.75	@	4.00
Miscellaneous	3.15	@	3.25
Black Stockings	4.25	@	4.50
Roofing Stock—			
No. 1	2.00	@	2.15
No. 2	1.90	@	2.00
No. 3	1.25	@	1.35
No. 4	1.10	@	1.20
No. 5A	1.10	@	1.15
B	1.05	@	1.10
C	1.00	@	1.05

TORONTO

Paper

(Mill Prices to Jobbers f. o. b. Mill)

Bond—			
Sulphite	.10½	@	.12½
Light tinted	.11	@	.13½
Dark tinted	.12½	@	.15
Ledgers (sulphite)	—	@	.13
Ledgers No. 1	.36	@	—
Ledgers No. 2	.27	@	—
Writing	.09½	@	
Writing S. C.	.10	@	
News f. o. b. Mills—			
Rolls (carloads)	3.50	@	—
Sheets (carloads)	—	@	4.25
Sheets (2 tons or over)	—	@	4.60
Book—			
No. 1 M. F. (carloads)	8.00	@	—
No. 2 M. F. (carloads)	7.50	@	—
No. 3 M. F. (carloads)	7.00	@	—
No. 1 S. C. (carloads)	8.50	@	—
No. 2 S. C. (carloads)	8.00	@	—
No. 3 S. C. (carloads)	7.50	@	—
No. 1 Coated and litho	14.50	@	—
No. 2 Coated and litho	13.50	@	—
No. 3 Coated and litho	12.75	@	—
Coated tinted	.15	@	—
Wrapping—			
Rag Brown	4.75	@	—
White Rap	5.25	@	—
"B" Manila	5.50	@	—
No. 1 Manila	6.50	@	—
Fiber	6.50	@	—
Kraft, M. F.	7.00	@	—
M. G.	7.15	@	—

Pulp

(F. o. b. Mill)

Ground wood	27.00	@	33.00
Sulphite easy bleaching	60.00	@	65.00
Sulphite news grade	56.00	@	60.00
Sulphite, bleached	78.00	@	90.00
Sulphate	67.50	@	70.00

Old Waste Paper

(In carload lots, f. o. b. Toronto)

Shavings—			
White Env. cut	3.65	@	—
Soft White Book shavings	—	@	3.15
White Blk, News	1.70	@	—
Book and Ledger—			
Flat Magazine and Book Stock (old)	1.25	@	—
Light and Crumpled Book Stock	1.10	@	—
Ledgers and Writings	1.40	@	—
Solid Ledgers	1.40	@	—
Manilas—			
New Manila Cut	—	@	1.60
Printed Manilas	1.10	@	—
Kraft	2.25	@	—
News and Scrap—			
Strictly Overissue	.90	@	—
Folded News	.90	@	—
No. 1 Mixed Papers	.70	@	—

Domestic Rags—
Price to mills, f. o. b. Toronto

	Per lb.		
No. 1 White shirt cuttings	.14½	@	.14¾
No. 2 White shirt cuttings	.08	@	.08½
Fancy shirt cuttings	.09¾	@	.10
No. 1 Old Whites	—	@	—
Third and blues	—	@	—